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Moving Pictures Applied to Lip-Reading
By EDWARD B. NITCHIE

Graphic Records of Speech
By E. W. SCRIPTURE

The Approach to the Normal
By A. J. STORY

The Music of Speech
By SARAH JORDAN MONRO

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NOTICE

Readers of The Volta Review who may be in arrears in their subscriptions for the current year should report the same at once to prevent the omission of the July and August issues of the magazine.

There are so many noticeable examples of speech facility, of pleasant modulation, even perfect vocalization, by deaf persons that teachers should insist upon good utterance; for if pupils are able to use the vocal organs and speak, they may also in most cases learn to control their voices and combine with simple utterance the desirable qualities of tonality, accent and rhythm.

WILLIAM R. STEWART,
THE VOLTA REVIEW, May, 1913.

Let us not forget that the "You know I love you, sonny," from a bright, loving parent will bring a smile from the little one. A smile always clears the atmosphere, if it is a real, genuine smile. I am afraid that too many of us, in our hurry with the many things we have to do each day, do not smile and say, "I love you," to these little human beings as often as we should.

MURIEL A. SMITH,
THE VOLTA REVIEW, May, 1913.

"DANCING AND GAMES DURING THE PLAY PERIOD"

Pupils of the Detroit Day School for the Deaf. See "Physical Training for the Deaf Child," page 131

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Volume 15 JUNE, 1913 Number 3

THE APPROACH TO THE NORMAL

BY A. J. STORY

Headmaster Stoke-on-Trent School, Contributing Editor "The Volta Review"

THE aim of the education of the deaf should be to fit them as fully as possible to meet the conflicts of life and to stand as nearly as may be upon an equality with persons who hear and speak." *

In other words, the nearness of the approach of the deaf to the standards of the normal in intelligence and expression is the measure of the success of their education. This approximation of aim at normal standards necessarily implies a corresponding one of principle and aim in the successive steps of education. It would be merely stupid to adopt principles and methods fundamentally opposed to those governing the intellectual development of normal children in the school training of the deaf and then to look for anything like an ultimate "equality with persons who can hear and speak."

This was the basic error of earlier methods of educating deaf children, the underlying inspiration of which seemed to be the conviction that those who could not hear were intellectually, radically and essentially, different from those who could, and that they demanded a medium, other than language itself, as the first-hand and direct agent of their personal expression. There still remain some—a diminishing band—who adhere to this effete notion.

"ABNORMAL" ERROR RECOGNIZED

It was the universal recognition of the fallacy of this premise that in 1880 and subsequently gave to the oral method that impetus which has established it as the predominant force in the instruction of deaf children — a predominance it can never lose. Whether oralism has, up to the present time, justified its original claims may be open to question; but there are few who will demur to its premises. It insists upon the similarity of the deaf to the hearing in intellectual possibility and also upon the adoption of natural procedures in the attempt to overtake that ideal, varying, as compared with those usual in the development of hearing children, only in directions in which physiological and psychological conditions do not harmonize, and then only to the extent really necessary, and always with the distinct purpose of approximating, as closely as may be, the methods and aims of normal education.

"APPROACH TO NORMAL" SUPPLANTS "WAR OF METHODS"

Formerly the contention of teachers centered itself around the question of methods of instruction. Although voices here and there would reopen that controversy if it could be done, it is undoubtedly ended; and whether the oral method be adopted or not, its lessons exist for the improvement of all methods and have benefited them. The disagreement, or rather the argument, now concerns itself with the nature of the necessary and inevitable variations from the educational procedures suited to children who both hear and speak.

* Philip G. Gillett, late Illinois School for the Deaf.

This interesting and important question has come to the front in every country seriously occupied with the teaching of the deaf. In England it has forced itself forward for consideration more rapidly than otherwise it would have done because of the influx in the staffs of the schools for the deaf of a large number of teachers certificated by the Board of Education for service among hearing children. It may be properly assumed that these teachers have received a sound training in the principles of general education and in the practical teaching of English and the usual subjects of the curriculum to children who hear. They come into the education of the deaf at a time when the long and useless wrangle over methods of instruction has ceased and when the approach to the normal is the leading theme and ambition among advanced thinkers in the profession.

The conditions of today may, therefore, easily lead to hasty and erroneous conclusions on matters of vital importance to the teaching of deaf children, unless there be a serious and scientific attempt to fully grasp the psycho-physiological conditions of such children as compared with those who hear. The unscientific procedure of educating the semi-deaf and the semi-mute with the toto-congenitally deaf may also favor the development of incorrect notions as to the actual position of the deaf-born with regard to education, unless they be entirely detached from the consideration of that class. Matters would be much clearer and the efficiency of the training of the deaf-born much more completely insured if classification on physiological lines were operative. At present there is real danger in the approach of the deaf to the normal of attempting to get there too soon, with the inevitable result of never getting there at all.

KNOWLEDGE OF NORMAL CHILDREN NECESSARY AS FOUNDATION

It goes without saying that the specialist-teacher of deaf children should, first of all, understand properly the conditions of the hearing child. This means that the specialist in education, as in law and medicine, is the product of further study and research on the part of those qualified by study and other ways as general practitioners. The general in education does not include the special; it is the ground work for that study. It is, however, quite true to say that the special in education does include the general. It was this fact that led Dr. Montessori, in the survey of defective children, to discover that the special features of their education could be profitably adopted in the training of normal children.

This further study, necessary in the prospective specialist-teacher of deaf children, must include a clear understanding of the comparative psycho-physiological position of the subjects of his future labors. He must make himself aware of the nature and extent of the inevitable differences in the conditions of deaf children as compared with those who hear, and train himself to be able to meet those differences with suitable adaptations of educational treatment. He must qualify himself to gauge the effects of the varying influences of anti-school life upon different children and to counterbalance, by adapted training, those effects where necessary. In short, the specialist-teacher of the deaf must train himself to a knowledge of every condition, circumstance, or factor in the life of the child, not in order that there should result any restriction of attempts to approach the normal, but rather that every effort put forth should be based upon an accurate and complete conception of the deaf child.

ADD TO THIS "PRACTICAL SPECIALIZATION"

Such a complete understanding of the deaf child as this represents cannot be the result of any dilettante experience with the work. It cannot be developed by mere theoretical speculation. The lecturer on education in normal colleges cannot communicate it. Books alone will not give it. Real competence can only be acquired by practical study and actual experience in the instruction of deaf children.

At the present time there are instances

which tend to show that there is a tendency to a loss of the sense of proportion in educational values. Two or three years since, the Chief Medical Officer of the English Board of Education, the department which has the supervision of educational as well as medical work for the deaf, decried the fact that more attention was being given to trade training than to language cultivation. And now in certain directions, and in the legitimate attempt to approach the standards of the normal, there is a tendency to adopt, not only the principle, but further, almost the exact details of the methods of educating those who hear and speak. The indication of this is perhaps more apparent in connection with language training than in speech development. But everybody has seen, and each of us in our novitiate has demonstrated it for himself, the failure of the general practitioner in education on first assuming the responsibility of educating a class of deaf-born children. The deterioration of speech is first noticeable; that of language takes a longer time to make itself apparent, but the failure is generally far more complete and much more enduring. Those of us who were qualified general practitioners in education prior to becoming teachers of the deaf remember that at the time we knew well enough what to aim at. Our previous knowledge of general education taught us that; but we had not realized the conditions of deafness, and therefore did not realize the necessary concessions and modifications in method demanded by the deprivation; and this must be the position of every new-comer into the teaching ranks unless he has had the advantage of special training, for which there should exist in all countries suitable and adequate provision to enable every aspirant for the office of specialist-teacher of deaf children to at least acquire the rudiments of his work before becoming responsible for the instruction of a class.

THREE FUNDAMENTALS OF SPECIALIZATION

There are three fundamental matters to which the prospective specialist-teacher must devote adequate and scientific attention:

1. *The Comparative Psycho-physiological Position of the Deaf Child*

Deafness is a physiological condition which involves the disturbance of the normal psychological balance of the child. A sense and a center which are active in hearing children refuse to do their appointed duty, with the result that all the way along, in impression and expression, the substitution of another sense organ and brain center must be effected. This substitution necessarily involves a loss in efficiency and, obviously, an alteration in the technique of method. It inevitably slows down the speed of development, and while the whole intellectual field may be open to the deaf, a much longer time must be occupied in exploring it. "In carrying on internal language he (the deaf child) cannot be an auditive; he must be a visual or a tactual." . . . "He must always differ from the hearing child and even from the semi-mute child" (Dr. James Kerr Love). To attempt to educate deaf children, without first appreciating these fundamental variations from the conditions of normal children is to court failure from the start.

2. *The Nature and Extent of the Necessary Concessions*

It must be perfectly evident that the physiological differences between the deaf and the hearing and the psychic variations that inevitably accompany them demand corresponding departures, not in the principles or aims of education, but certainly in the detail of the method employed. Speech is not to be "picked up," as the hearing child so easily gathers it, and therefore language is not to be developed, in those who have never heard the music of its spoken forms, by any method exactly similar to those which produce it in the fully sensed child. We are in no way taking up any attitude antagonistic to the attempt to approach the normal to the fullest possible extent when we say that in these regards the deaf-born must always differ from the

normal. Every such child who enters our schools is an object-lesson of the effects of these differences; otherwise each would bring with him to school his first fruits of speech and language; for speech, in fuller degrees than are possible in school communities, has existed from birth all around him. That excellent provision lately coming into being — the "baby" school—is in itself a recognition of these differences—a most hopeful one, because the more nearly the development of speech and language can follow upon birth, the greater the prospect of diminishing the amount of necessary specialization and the closer the approach to the normal in method as well as aim. But even then deafness will always demand degrees of variation, differing in individuals, from the procedure of educating children who hear. Wrong notions in the past inspired these variations, but now, and in the future, it would be almost as serious an error to refuse to make concessions that are physiologically necessary.

3. *Contributory Factors in Education*

There are a number of attendant conditions and circumstances in the training of the deaf that must be considered by the teacher: The nature, intellectual or otherwise, of the home; the mental quality of the child; his general physiological condition; his age on coming under instruction; the fact that he must be educated as one of a number, generally about ten, and other features connected with instruction, may call for recognition in adapted educational treatment. Education is not merely a preparation for life; it is life itself; and therefore it must concern itself with every living question affecting the child.

Now the leading lines, and perhaps the only two highly specialized subjects to be taught by the specialist-teacher of deaf children, are speech and language. It is by these that all other things in education, whether academic, industrial, or moral, become possible. It is, therefore, not so surprising as at first sight it would appear, that the present contention should concern itself mainly with these very difficult matters. We recently heard it said that a candidate for the office of specialist-teacher of the deaf could not be expected to diagrammatically represent the sounds of T and K. Yet presumably, without the knowledge of the organic positions in the sounds of speech himself, he could be expected to impart them to deaf children. It is this lack of knowledge in teachers that holds the oral method back from achieving that of which it is capable. It has also recently been claimed that the systematic teaching of language is unnecessary, and that it is preferable, as every one would agree if it were possible, to develop its knowledge just as the hearing child acquires it.

The child who hears has both the phonetic and the kinetic elements for speech. He imitates, regulates, and corrects mainly by the exercise of his ear. The deaf child has the kinetic force for speech, but he lacks the phonetic and corrective stimulus. Substitution must take place; the eye must replace the ear. The child is sensorily aware of the speech he attempts only by tactual manifestations, and not by the same sense as that which gave him its model. The regulating efficiency of touch cannot be compared with that of the ear; and therefore, while calling upon direct imitation to contribute its fullest quota to the development of speech, and it can give much, the continuous assistance of systematic teaching of sounds, syllables, words, and sentences will always be necessary in deaf-born children. This is so in the case of children who hear. In a recent publication of the English Board of Education on the "Teaching of English," errors in speech are indicated and their systematic correction advised. If this be a necessity in hearing children, it cannot be hoped to avoid it in the deaf. A knowledge of the scientific detail of speech; the ability to diagnose error and to correct it; the facility to adopt *natural* means of developing speech, so far as they can do so, constitute the very minimum that the deaf child has the right to demand in those who profess to endow his lips with

speech, and no matter what theories are advanced, the work of teaching speech to the deaf calls for, at least, this minimum knowledge of the subject. If it were not so, every speaking person would be a competent teacher of speech to the deaf and every child would speak without special teaching.

REPLACE SIGNS WITH WORDS

The hope of the deaf in intellectual life is the shortening of the "sign stage" common to all children, and the substitution therefor of the word method of representing thought. No matter how crude the attempts to understand speech may be; no matter how imperfect the attempts at speech, the earlier oral measures are adopted, the better for the ultimate achievement in language. When the word stage is entered upon, the memory of the forms used depends upon visual or tactual impressions, or both—a slower and far more difficult medium than in the case of hearing children. Experience with words is existent directly in the ratio of the number of those which call up associated impressions and does not depend only upon the number uttered by the teacher to the child. This is well pointed out in the publication "The Teaching of English" previously referred to. The lack of experience with words that must always ensue in the deaf child, consequent upon the fact that observation must always involve conscious effort because of the difficulties of speech-reading, particularly in the earlier years of instruction, imposes limitations upon the rapidity and certainty of language acquirement. We adopt the principle that language must be developed by use and that it must follow the realized needs of the child; but it appears to us, in view of the child's position toward it, that he should, as he goes along, be trained to a knowledge of the functions of words and the rules on which the construction of particular sentences are based, if he is to grow to express his meaning correctly and to understand what is said by others. This implies systematic teaching, whatever the form of the system may be.

Having regard to all the circumstances of deafness, we believe that in the development of language the free use of words to fit the present necessities of the child must introduce, precede, and make essential the pursuance of a definite and logical method of classifying, exercising, and fixing the various forms and constructions in an orderly manner in the mind, proceeding from the simple to the difficult, as shown by the stages of their use in the hearing child. This growing and continuous certainty in the verbal accuracy of forms, previously understood, reflects beneficially upon the free language that follows, rendering it easier and more intelligible to the child. The knowledge so set up relieves the strain of mental concentration on the sequence of words in the sentence and leaves the pupil freer to grasp the ideas expressed, thus assisting speech-reading, which depends more than anything else upon an intimate acquaintance with language forms; so that thought may anticipate and follow the seen evidences of speech on the lips.

LOGICAL LANGUAGE LESSONS

In our judgment, any sufficiently long experiment in continually talking to the deaf child, taught in groups, as in school, leaving him to attain to verbal accuracy by the mere chance repetition and the exercise of his own unaided powers of association, will of itself and very quickly indicate the necessity for the accompaniment of an intelligent and logical system of definite groupings and classifications, so as to illustrate the general similarities and agreements of sentence forms. By this we do not mean the return to the unintelligent exercises of some 20 or 30 years since, such as the abstract and often meaningless operations of supplying missing words, forming sentences on given words without relation to the circumstances of the time, the correction of manufactured errors, which probably the child would never make, and others equally absurd. We mean, rather, the representation of an existent idea in the particular verbal form under exercise.

Any teacher who knows his business will understand how to do this.

Our views on the use of and necessity for a "course of lessons in language" were fully stated in our book, "Language for the Deaf," published in 1905, and we have seen nothing in our subsequent experience, nor in our observation of the work of others in connection with the deaf-born to cause us to make any serious modification of them. In that book we stated three guiding principles of language development:

1. "The direct and immediate association of words with their corresponding ideas."

2. "The paramount necessity for providing the child with the fullest experience of conversational forms."

3. "The commensurate valuation of the literary or written forms of language in their influence upon the child's development in intelligence and expression."

If it be granted that there is a distinction and a relation between colloquial and written English, it is both possible and necessary generally to work to a scheme of language culture already mapped out, bringing together the elements given in conversational or incidental teaching, illustrating intelligently and fixing their relations, one to another, and their harmonious coöperation in the statement of complex ideas in accurate sentence construction.

INTELLIGENT ATTENTION TO THE TRUE NEEDS OF THE CHILD

Let us reiterate that this paper is written with the deaf-born child in mind, and not the semi-mute or the semi-deaf,whose position is entirely different with regard to education, in that they have possessed, or now enjoy, some advantage in hearing power. Let it also be understood that we do not seek to thwart the effort to approach the normal to the fullest possible extent, but only desire to prevent hasty and ill-founded developments based upon an erroneous conception of the deaf child. The education of such a child will ever remain the work of the specialist-teacher; and so long as deafness exists, while the aims and the realizations of education may approximate or even, we hope, overtake those of the normal type, there will continue to be the real necessity, if only the position of the child be fully understood, for modifications in the methods of developing speech and language, in which the natural and the free must be assisted by the systematic, which, while itself orderly and logical, may yet remain free in the sense that it ministers to the true needs of the child, if only the work be guided by an intelligent teacher.

THE DARING AND DAUNTLESS SPIRIT OF THE AGE

The daring and dauntless spirit of the age, among many other seemingly miraculous and impossible feats, has attempted to teach speech and speech-reading to persons totally deaf. It has failed in innumerable cases, and how many have shouted "It cannot be done." But always there was a reason, and not always was there a good reason. The extracts from the opinions of 18 graduates of the Clarke School, as printed on the first page of this issue of the *Outlook*, show that, at least in these 18 instances, success has been obtained. Scientific duplication of conditions means certain duplication of results. It becomes a question of whether results are worth the determination, brains, and money necessary to secure them. A great many thousand deaf have profited comparatively little from the oral instruction and declare that it is not worth what it costs them and the State; but these 18 think differently.

The daring and dauntless spirit of the age demands the highest, the best, that is attainable in education, regardless of cost. Its interest in the cost is merely incidental to its interest in the attainment of results heretofore deemed impossible or utterly visionary. It has little patience with the negative argument that has fooled the world so often: "It has never been done; therefore it can never be done."

Should not these 18 increase to thousands? The majority of teachers say, "It cannot be done." Like the rest of the world, they are too often deceived by failures. In popular education, in the education of the deaf, no less than in other fields, the wonders of the present generation surpass the wildest dreams of past generations; so it should be in the future education of the deaf.—*Oregon Outlook.*

Prof. Isaac Brown Gardner has been re-elected for a third term as Superintendent of the Arkansas Deaf-Mute Institute.

MOVING PICTURES APPLIED TO LIP-READING

BY EDWARD B. NITCHIE

Principal New York School for the Hard-of-Hearing, Contributing Editor "The Volta Review"

THE pictures illustrating this article were taken by the Animated Weekly Universal Film Manufacturing Company for the New York *World*. As they illustrate some interesting points relating to lip-reading, it will repay both teachers and lip-readers to study and analyze them. They do not present anything startlingly new, nor upset previous ideas; but they do serve to emphasize some facts that need all the emphasis they can have.

The sentences were spoken at a speed of about 11 to 12 movements per second, only a trifle slower than ordinary speech. That does not mean that each movement required 1/11th or 1/12th of a second, for some of them were much quicker and others slower. The moving-picture camera was operated at a speed of 16 pictures per second. As the eye is capable of consciously receiving only eight or nine distinct impressions per second, it will be seen that the camera caught more of the movements than the eye can catch. Even thus, as we shall see, the camera was not quick enough to take all the movements; for 16 pictures per second means 1/16th of a second for each picture, and some of the movements were quicker even than that.

The sentences will be found harder to read from the pictures than they would be from the lips. This is largely because the pictures, observed one at a time, require us to study them out analytically; whereas the spoken sentence comes to us from the lips as a completed whole, on which the mind acting synthetically helps the analytical process of the eye. If the pictures were reproduced as true moving-pictures, they would be easier to read than as they appear on the pages of the REVIEW.

VARIED MOVEMENTS ILLUSTRATED

The sentences chosen for the pictures are the familiar proverbs:

1. " 'Tis love that makes the world go round."
2. "Spare the rod and spoil the child."
3. "Fine feathers make fine birds."

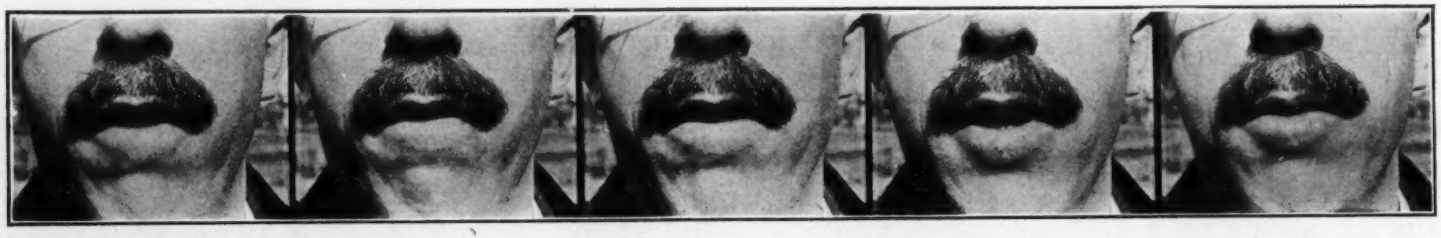
The sentences provide considerable contrast of movements within the sentences themselves, and, taken together, they show all the fundamental consonant movements except that for *y*, and a good variety of the vowel movements, including puckered, relaxed, and extended lip actions; narrow, medium, and wide lip-openings, and double movements for diphthongs.

There appear in the pictures also certain transition movements—movements, that is, which do not in themselves represent or reveal any sounds, but which mark a transition from one definite sound movement to another. The eye is not ordinarily quick enough to catch these movements (the camera acting almost twice as quickly as the eye), and it would be of no benefit for the lip-reader to be able to see them. These transition movements appear in the pictures usually after a consonant movement having a pronounced lip action; specifically, after the *p's* in "spare" and "spoil" and the *ch* in "child" (sentence 2), and after the *f's* in "fine" (twice in sentence 3) and the *b* in "birds." Such a movement occurs also after the vowel sound of short *ŭ* and before the *v* in "love" (sentence 1). It will be noticed in each of these transition pictures that the lower lip is more or less blurred, showing clearly the quickness of the movement.

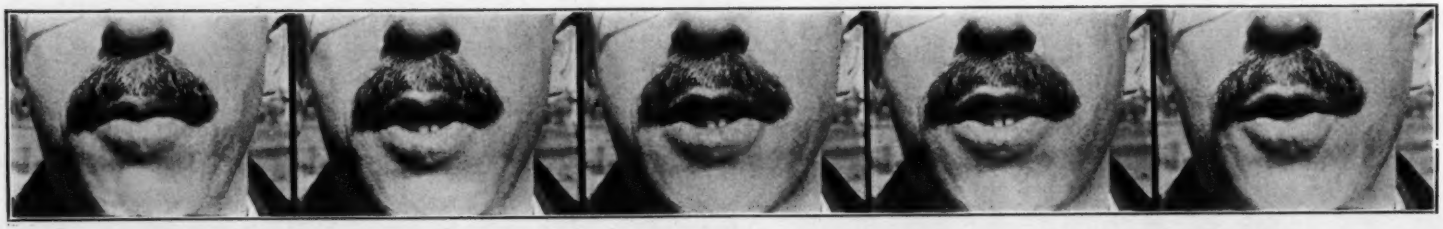
What is of more importance to the lip-reader is to notice how one movement frequently influences another. This is especially marked in the case of the unaccented vowel in the word "the." In the first sentence the lips for this vowel are markedly puckered in anticipation of the required puckering for the *w* in "world." In the second sentence a simi-

1. "'*Tis love that makes the world go round!*"

'*Ti* *s* (transition) *l* *o*

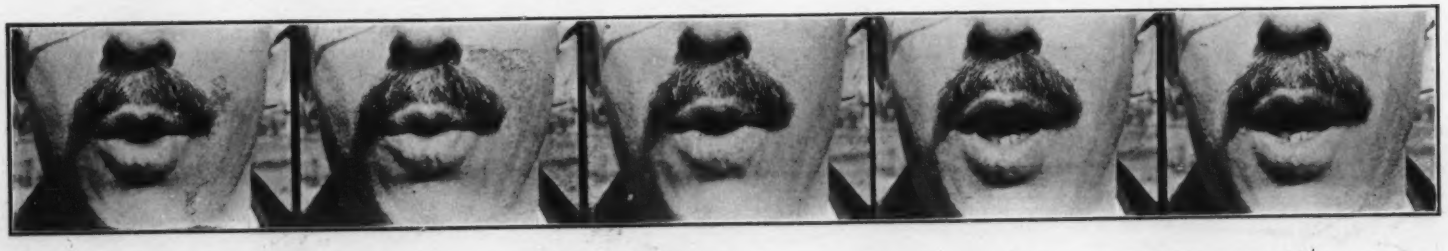


(transition) *v(e)* *th* *a(t)* *m*



m (cont.) *a* *(ke)s* *th* *e*

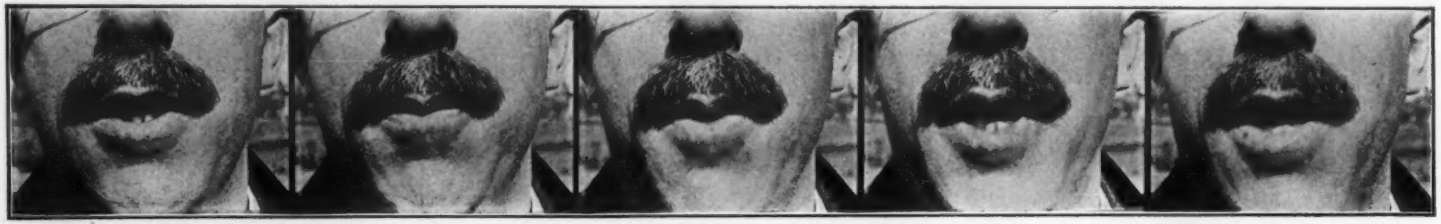
w *or* *ld* *(g)o*



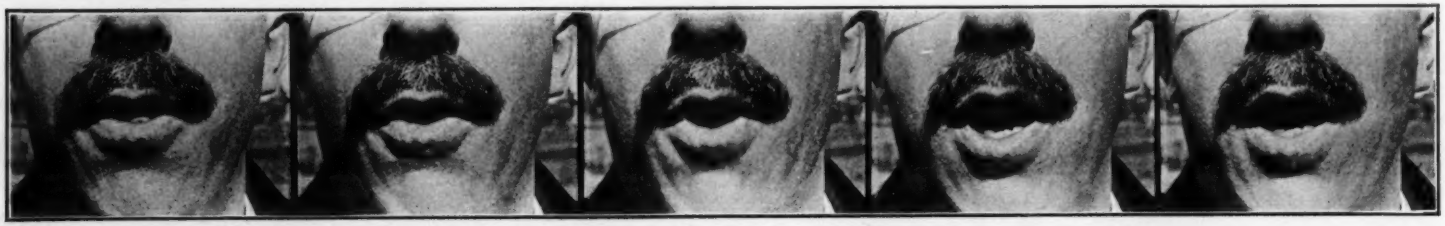
o (cont.) *r* *ou*

ou (cont.) *nd*

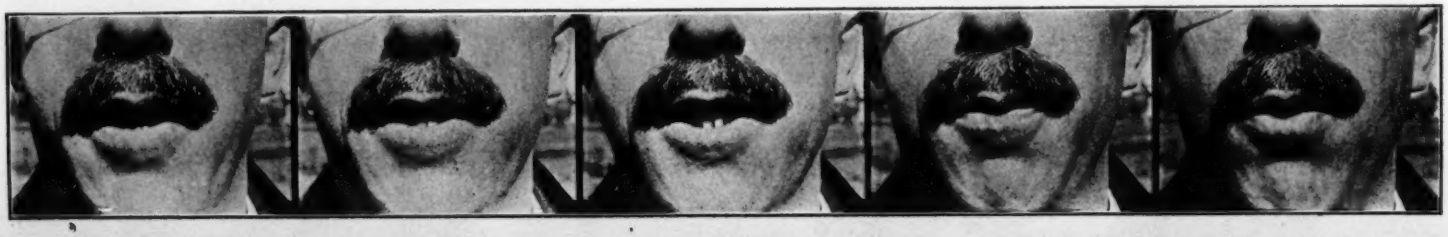
2. *Spare the rod and spoil the child.*



S *p* (transition) *a* *r(e)*



th *e* *r* *o*

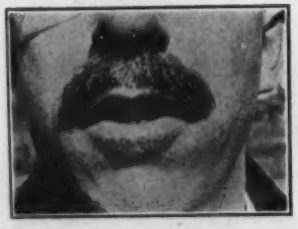


d *a(nd)* *s* *p* (transition)

a *a(na)* *s* *p* (transition)

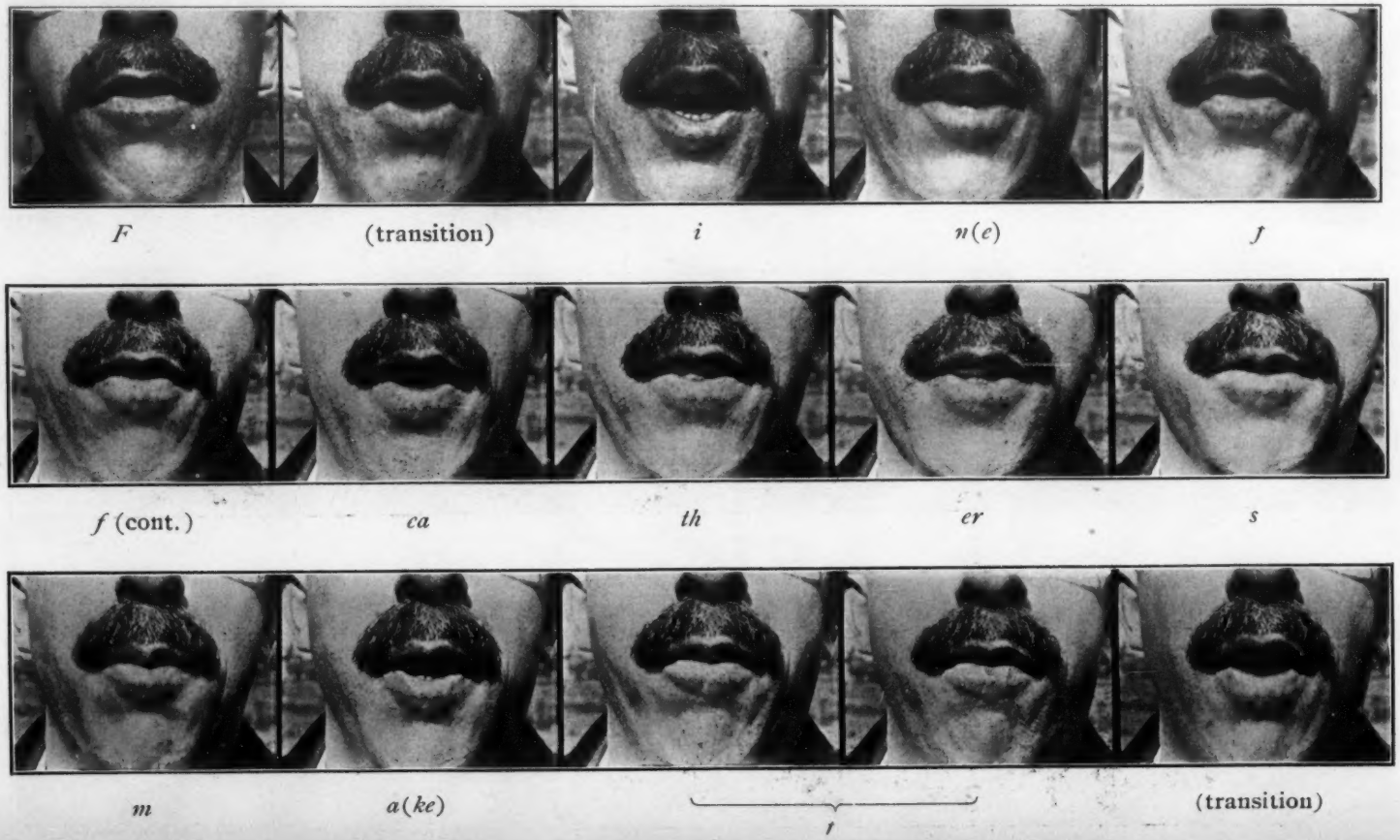
oi *l* *th* *e* *ch*

(transition) *i* *l*



d

3. *"Fine feathers make fine birds!"*



i
n(e)
b
(transition)
ir
d
ir (cont.)
s

lar puckering is found in anticipation of the puckering for the *r* in "rod"; but where the "the" occurs before "child," the lips obviously begin to project in anticipation of the projected movement for *ch*. The projection of the lips for the *ch* in "child" also clearly influences the movement of the following long *i*. Other instances will be found, as where the puckering for the *ur* sound in "world" and "birds" is more or less continued through the following movements for *ld* and *d*. Again, in the word "that," following "love" (sentence 1), the movement for the *th* is still strongly under the influence of the preceding lip-to-teeth movement for the *v;* and similarly, the *th* in "the" after "makes" still feels the influence of the *s*.

AN ARGUMENT FOR SENTENCE PRACTISE

These considerations show how wise it is not to be dogmatic as to the movements for any sounds, for both vowels and consonants are affected, and particularly how wise it is to practise and observe the movements always in words and sentences, in their natural combinations with other movements, and not formed singly. And the knowing teacher will give his pupils such varying words and sentences as to bring the movement under study into combination with all other movements possible.

The obscurity of certain movements is also made evident by these pictures. This is particularly true of the movements for the palatal sounds, *k* and hard *g*, the tongue movements for *t, d, n,* and *l,* and the movements for unaccented vowels. In "makes" and "make" (sentences 1 and 3) the *k* does not show at all, nor does the *g* in "go" (sentence 1). Even theoretically there is no lip movement for these sounds, and the pictures confirm this; the lip movement for the preceding or following sound covers the *k* and hard *g* in every case.

The tongue movement for *t, d,* and *n* is not in any instance visible (with one possible exception); but the concomitant lip movement (lips relaxed and only slightly parted) is evident. In "'tis" (sentence 1), I am uncertain whether the first picture represents the *t* or the short *ĭ,* for the lips would be the same for either. But the *nd* in "round" (sentence 1) and in "and" (sentence 2) show this lip movement, but no tongue movement, as is also true of the *d* in "child" (sentence 2) and of the *n* in the second "fine" (sentence 3). The *n* in the first "fine" shows the tongue movement very, very slightly. The *d's* in "world" (sentence 1) and "birds" (sentence 2) show no tongue movement, and their lip movement is influenced by the puckering of the preceding *ur* sound. And for the *d* in "rod" (sentence 2) the lips are slightly more parted, under the influence of the preceding wide opening for short *ŏ,* than they are for the following *nd* of "and." The *t* in "that" (sentence 1) is entirely lost.

For *l* in "love" (sentence 1) the tongue movement is visible, but not in "world." And in "spoil" and "child" (sentence 2) only the concomitant lip movement for *l* (lips relaxed, but more parted than for *t, d,* and *n*) is visible.

Unaccented vowels are quick and obscure. This has been shown in the obscurity of the *e* in "the" under the influence of following sounds. The *a* in "and" (sentence 2) is lost, as though the sentence were "Spare the rod 'nd spoil the child." And that is what we do say, speaking naturally. The second element of the diphthongs long *ā,* long *ī,* and *oi* is practically an unaccented short *ĭ,* and the movement for this unaccented element appears in the pictures only once out of six times—that is, it does not appear in "makes" (sentence 1), nor in "make" (sentence 3), nor in either "fine" (sentence 3) nor in "spoil" (sentence 2); but it was caught in the *ī* in "child" (sentence 2), though the lips here, under the influence of the first element of the *ī* and also of the following *l,* are more parted than, theoretically, the movement for unaccented short *ĭ* should be.

NECESSITIES FOR LIP-READING SKILL

This obscurity of some of the movements emphasizes the need of training

the mind, along the line of its synthetic and intuitive powers, to help the eye. No eye, however skillful, can ever be sure of all the movements; that is a physical impossibility. Real skill in lip-reading cannot come from eye-training alone; training by which the mind is enabled quickly to supply the missing parts and construct the complete whole is essential.

Yet the value of training the eye to its maximum efficiency is also illustrated. An eye trained to act quickly will obviously have an advantage over the eye that is exercised with slow practise only. And with quickness must go as high a degree of accuracy as possible. It takes a sharp eye to see the difference in rapid speech between an extended movement (see the long *ā* in "makes," sentence 1, and in "make," sentence 3) and a relaxed movement (see the short *ŭ* sound for the *o* in "love," sentence 1). And a skilled knowledge of the differences between a narrow width of opening between the lips (in " 'tis," sentence 1), a medium opening (short *ŭ* for *o* in "love," sentence 1), and a wide opening (*ŏ* in "rod," sentence 2) is an invaluable lip-reading asset. The slower and more pronounced double movements for long *ō* in "go" and for *ou* in "round" (sentence 1) even the untrained eye can see without difficulty; but for the slighter distinctions it takes much and faithful practise to make the eye expert.

Another interesting point brought out by the pictures is the slower formation of the emphatic words, as shown by the number of pictures required for such words as "world," "round," "rod," "child," "birds"; while the unemphatic words, as " 'tis," "that," "the," "and," require only one or two pictures each. The true method of studying word formation is thus indicated to be in sentences, in their natural associations with other words.

In fact, the upshot of this experiment with moving-pictures as applied to lip-reading is chiefly to enforce principles of teaching which we already know; but this practical demonstration of them is full of encouragement and value. To epitomize them: We should train the eyes to be as quick and as accurate as possible; we should train the mind to grasp the thought, to construct the whole from the parts, and we should develop all forms of exercise along natural lines.

A STATEMENT FROM THE NEBRASKA PARENTS' ASSOCIATION TO PROMOTE THE ORAL EDUCATION OF THE DEAF

OWING to the many misleading and false statements made in the press and otherwise as to the "Nebraska Law" and as to the aims and motives of this association and of its officers and members, we deem it proper to make a statement as to how it came into existence, how and what it has accomplished, and its aims for the future, and to exhort other parents of deaf children to follow our example.

One day in December of the year 1910 two parents of deaf children in Nebraska saw a short item in a State daily paper that reminded them that perhaps it was time to start something to improve the Nebraska School for the Deaf at Omaha. On practically the same day they each wrote the then Governor-elect suggesting an investigation of the oral method of teaching the deaf and of the methods used in teaching the deaf at Omaha.

They arranged a meeting with the Governor after he was inaugurated and, together with their wives, met him in Lincoln and enlisted his interest. They arranged with the committee in the Senate that had charge of matters relating to the school and had a hearing before them. The committee, of which the present Governor of Nebraska was a member, advised them to introduce a bill embodying what they desired; that while it might not become a law at that session, it would educate the Legislature and the people on the subject. This was done. The Senate committee visited the school and reported in favor of the bill.

In the meantime two other parents of deaf children heard of the bill and hastened to help. The bill, opposed by the then superintendent of the school, his teachers, and Mr. Olaf Hanson in his official capacity, passed the Senate and the House and was signed by the Governor. The then superintendent was removed, and Mr. Frank W. Booth, Superintendent of the Volta Bureau, at Washington, D. C., and a teacher of the deaf of 30 years' experience,

was offered the position after a canvass of the best available men for the place, and after two weeks of consideration and an inspection of the school he accepted.

THE ASSOCIATION ORGANIZED

Growing out of the efforts of these four parents and their wives, the Nebraska Parents' Association to Promote the Oral Education of the Deaf was organized. It now has a membership of over one hundred, and is growing and will continue to grow.

Notwithstanding the handicap of no building to separate the oral department from the manual, and insufficient appropriations, nevertheless, under competent oral teachers during the last two years, the school has made great strides towards the goal desired.

The enemies of the association were always at work, and the former superintendent, who desired reappointment, aided by Mr. Olaf Hanson, a few of the members of his association, and a few other selfishly interested parties, made great preparations to undo our work at the session of the Nebraska Legislature that has just adjourned. They hired a lobbyist from another State to stay in Lincoln and work for the repeal of our law, and three bills instigated by them were introduced.

GOOD WORK OF SCHOOL RECOGNIZED

Several committees from the Legislature visited the school, besides individual members, and all reported back in favor of the law and in favor of the way the school was being conducted, and at the end of the session very few of the members of the Legislature were against the law or against the management of the school.

Governor Morehead has reappointed Superintendent Booth. The Legislature killed the three bills to repeal our law; $100,000 was appropriated for improvements at the school, $60,000 to be for a new building to segregate the oral department from the manual department, and larger appropriations made for the maintenance of the school, so that proper work can be done there and the oral method made a success.

The "Nebraska Law" bars no deaf child of Nebraska from an education. It provides for the oral education of those that can be taught orally, and those that cannot are to be taught manually, or any other way best suited to them.

This association is composed of parents of deaf children, and as such they have sympathy for all deaf persons and are organized to help them in every way. They have investigated the matter and know what they are about. They know that under the new régime the school is making a success. They have investigated other schools, both strictly oral and combined, and they know what is best for their children. Those that must be taught manually, they want taught manually, but they want them separated from those orally taught.

NO OUTSIDE AID RECEIVED

They have been charged with receiving financial aid from other persons and associations interested. Neither the association nor any member of it ,has ever received a dollar of financial aid from any one. They have paid out their money and sustained their fight without aid from any source. The association has made a straightforward fight on the merits of its case, paying for its own literature, and each member paying his own personal expenses, and no money has been spent in any other manner for hired lobbyists or otherwise.

We observe that the National Association of the Deaf, through Olaf Hanson, say that they are not discouraged, but are organizing to fight us still further. We also observe that certain superintendents have commended him in his work and are subscribing to a fund to enable him to continue the fight.

We deem it time that all orally educated deaf of the United States and all parents of deaf children organize to fight this matter to a finish; that they see that every school for the deaf of the United States is on an oral basis, and every indifferent and incompetent superintendent and teacher shall be obliged to seek other means for a livelihood.

We are standing by our guns in Nebraska and herewith issue a call to you to get on the firing line.

NEBRASKA PARENTS' ASSOCIATION TO PROMOTE THE ORAL EDUCATION OF THE DEAF.
E. J. BABCOCK, *President.*
C. F. SCHARMANN, *Vice-President.*
T. D. OLIN, Omaha, *Secretary.*
J. F. MCLANE, *Treasurer.*
MATTIE G. DAFOE, *Superintendent, Dept. Children under School Age.*

JOHN S. REED, Lincoln,
J. L. BEEBE, Alma,
FRANK FALBAUM, Omaha,
AL. N. DAFOE, Tecumseh,
Executive Committee.

ADDITIONAL STATISTICS

Since the May issue of the REVIEW went to press the following reports have been received from schools for the deaf, the data of which should be added to the statistics printed in that number of the magazine:

Cincinnati Oral School, Main and Woodward streets, Cincinnati, Ohio; Virginia A. Osborn, principal; 36 pupils, all taught by speech, without spelling or sign language.

San Diego, Cal., Public School Class for the Deaf; organized in February, 1913, under the direction of Mrs. Lillian Paddleford; number of pupils not stated.

THE MUSIC OF SPEECH

BY SARAH JORDAN MONRO

WHO that listens to the speech of a little child, with its elusive lights and shadows, its heights and depths, its varying form and color, its contagious joy, dare say speech was not created to be music.

"Speech is the breath of universal life, awakened to sound by impulses of activity and colored by personality; then, why not music?

"Breath is rhythmic, life is joy—if you get enough of it— and personality should be beauty. Surely *joy,* and *rhythm,* and *beauty*—speech—should be music.

"But speech is not always music; neither is singing. Consider the discordant shock when a singer who has lost the joy of originality, and trampled on the ideals of art and of truth, exhibits himself as a mere expert sound-producing machine."

Is it not just this element of music which is lacking in the speech of our deaf pupils? Although the teaching of speech and the training of the voices of deaf children have made rapid strides in the last 10 or 15 years, there is still a great deal more to learn and to do. The means employed by teachers of the deaf to produce a good quality of tone, inflections, modulation, and rhythmic fluency in the speech of their pupils have not brought the ideal result, if we take our own best speech as our standard.

"BREATH IS RHYTHMIC"

Let us consider the first of the three points which ought to bring pleasing as well as intelligible speech. "Breath is rhythmic." The act of breathing in a little child in normal health is rhythmic, and if nothing comes, as he grows older, to interfere with this natural way of breathing, there will be no need of breathing exercises. But we breathe for two purposes—first to sustain life, and secondly to enable us to express our thoughts by means of speech. Life breathing, if the body is normal, is easy and regular, while breathing in the act of speaking is varied in its movement and at the same time rhythmic.

The first is in a measure involuntary, but the second is influenced by the thought. Notice the breathing if the speaker is in a calm, quiet state of mind, as when making a remark in which he has no special interest; it is regular and even. Note the change when the emotions are aroused—disgust, surprise, anger, it may be. How quickly the breathing shows the change in the mental attitude! It becomes quicker and more or less irregular, according to the vividness of the thought. This leads naturally to a subject which is especially important in our teaching of speech—the rhythm of thinking. This is important because it lies at the foundation of our work; for the mind is the power, the dynamo, as it were, which sets in motion and controls the breath, the changing of the breath into tone, the quality of tone, the formation of the elements and combinations, intelligent phrasing, rhythm, and fluency; in fact, every phase of that which is our medium of communication with our fellow-beings. Space will not permit more than a slight consideration of this subject.

Psychologists tell us that there is movement in the act of thinking, that the mind proceeds from idea to idea by pulsations. It rests, as it were, upon one thing; then leaps over to the next, according to the law of the association of ideas.

RHYTHM IN THOUGHT

Coleridge says, "Most of our readers will have observed a small water insect on the surface of rivulets, which throws a cinque-spotted shadow on the sunny bottom of the brook, and will have noticed how the little animal wins its way up against the stream by alternate pulses of active and passive motion—now resisting the stream and now yielding to it,

in order to gather strength and a momentary fulcrum for a further propulsion. This is no unapt emblem of the mind's self-experience in the act of thinking."

Professor James has shown that even in holding the attention of the mind upon the simplest object there is this rhythmic motion. We must have it in order to maintain the continuity of attention. The more intensely one thinks, the more closely the words are grouped, and the more evident are the pulsations of the mind. Phrasing comes more easily through vivid thinking. One thought is in the speaking, as one word and inflection comes with the pause. If the thought finds expression in speech, that speech will be rhythmic, according to the degree of rhythm in the act of thinking.

DIRECTING MENTAL ACTIVITY

We must, then, train the mind to act and to think vividly. This, with many little children, especially those who are active, is not as necessary as with those who are slower and duller of intellect. The mind of the child deprived of the sense of hearing, and it may be of sight also, is active. Although he has little or no language to express his thoughts, many ideas come to him through his unimpaired senses, and his brain is more or less active; but this activity needs to be directed and in many cases increased. This can be done by training in sense-perception, and also by concentration and transition of thought, which bring rhythm.

Harmonic gymnastics are very helpful in giving freedom to the action of each member of the body and prepare it to respond to the action of the mind; or, in other words, it brings a harmony between the action of the mind and of the parts of the body used, be it the voice and speech apparatus or those parts used for locomotion. Folk-dancing and finger-plays are also an assistance in bringing about this result.

We know that the mind which sits, as it were, upon a throne, dominating the body, acts rhythmically, and that breathing is rhythmic; let us now consider this element in the voice, which is breath-vocalized. To an unthinking person, the idea that music can have any connection with the teaching of the deaf, either appealing to them as a pleasure or useful as an aid to speech, seems a strange one, not worthy of a moment's consideration; but to an earnest teacher, who is looking on all sides for help, any suggestion for better speech will be of interest.

What are the elements of music? Changes of pitch, rhythm, and harmony. The question is often asked, "Why do the voices of deaf persons generally lack these qualities which make our speech musical?" The answer comes at once, "Because we can hear; the ear gives us the change in pitch, and rhythm and harmony come." Is this entirely true? Why is it, then, that many persons who have the sense of hearing speak with little change of pitch and weary us with the monotonous drone of their voices, while others please us with a constantly varying pitch? Is this due to the sense of hearing?

No, at least only in part.

MUSICAL SPEECH THE PRODUCT OF A VIVID, WELL-TRAINED MIND

It is the quick, varying, rhythmic action of the mind in thinking, and the result must be heard in more or less musical speech.

Take, for example, the common remarks, "How do you do"? or "That is beautiful." When one has simply a feeling of indifference there is really very little change in pitch and little so-called expression; but when it comes from great surprise or admiration, there is a decided change in pitch and rhythm. Disgust gives another variation in pitch, and disappointment or sorrow still another, generally on a low key.

Why is not all this the case with the voices of our deaf children? Largely because they do not think freely and vividly, being hampered in the beginning, and many for a long time, by the forms of speech and in the use of language.

SENSE OF MUSIC THROUGH TOUCH

Our deaf pupils can be trained through the sense of touch to get a certain degree of knowledge of pitch as it changes. They can get it through inanimate objects in different parts of the voice apparatus and in musical instruments, which give vibration and also rhythmic pulsation. The writer considers a musical instrument, especially the piano, of the greatest value in teaching speech and in training the voices of deaf persons, both children and adults. The full tones of a pipe organ give a stronger vibration and an idea of greater volume; but the rhythm, when a piano is played, is more easily felt than in an organ. When, about 15 years ago, the thought came to the writer that the rhythm of speech could be shown by this musical instrument, she did not realize the many other ways in which it would assist the teaching.

As the pupils stand about the piano, with their hands resting upon it or their bodies in contact with it, while chords are struck, the vibrations are carried by bone conduction and a mental impression is received; the length of vibration is noted and to a certain degree the relative pitch; the volume is felt, and at the same time a distinctive character given to the vibration by a delicate touch upon the keys and that which is produced by a more decided touch.

Children have described the sensation while leaning against the sounding instrument as a wave-like motion passing from the chest to the head; others as the same kind of movement going through the arms to the ears, indicating the quivering motion with the hand.

BENEFIT OF THE PIANO IN SPEECH-TEACHING

The following are some of the benefits which the writer has found are to be derived from the use of the piano:

1. The musical instrument is something tangible and gives support to the tone. When one who hears whispers he misses the sound of his own voice and the support seems to be gone. May it not be a similar sensation which a deaf person experiences when he speaks and does not hear his own voice? He is not altogether conscious of this loss, for he has never known what it was to hear. However, judging from observation of several hundred deaf children, he has a grateful sense that help has been given him and that this support to the tone is furnished by the piano.

2. It takes the thoughts away from the speech and vocal organs; therefore there is less exaggeration and more natural action. We know that where the thoughts are centered there is the greatest activity and constriction. We cannot have a natural action when the agents are fettered by this condition. While speaking with the piano the person's thoughts are upon the vibration and the pleasure he is having, and his speech and voice organs are left free to act without self-consciousness.

3. Good enunciation. Strange as it may seem, while the pupils are apparently unmindful of the organs of speech, their articulation is better while working with the piano and the improvement shows in their general speech. They speak easily and naturally and the positions are definite. This result probably comes from the fact that the piano gives them the feeling of definite action.

4. Vowels are given a more natural relation to the consonants by use of the piano. Scientifically expressed, a vowel position should be held until the overtones are finished. The ear takes care of that, or should do so, and those who hear do not give it a thought; but when this sense is lacking, a guide can be given by the piano. The pupils get this relation unconsciously and without drawling the vowel sound, but give it as a delicate but definite touch of the voice.

5. Pitch. The idea of pitch seems to be recognized by the pupils, but they are able to make changes in pitch only to a limited degree. However, they get a pitch which harmonizes with that given by the piano, and the absence of discord is very noticeable. It is often the case that a child who has never heard gets the pitch, or at least produces it, to a certain

point in the scale more correctly than one who has not always been deaf. The writer thinks that this can be explained, in part, by the fact that the child deaf from birth has been trained to habits of concentration and attention. In the beginning of their speech work, pupils are taught that a vowel sound results from a definite, fixed position, giving a tone which does not change in pitch; but later on they must learn that the voice changes in pitch many times in a short sentence. Through a sense of this change in the pitch of the vibrations of the piano very helpful work can be done in getting natural inflections.

6. Accent. Accent, too, is easily taught by the use of this instrument, when the idea is given that accent is a delicate, definite touch of the voice, not great stress laid upon the vowel sound.

7. Volume. The appreciation of the volume of tone is given by the fuller vibration, and a loud sound is produced without unnecessary physical effort.

8. Purity. When the piano is used, there is greater purity of tone, because the pupil feels the vibration as a firm foundation upon which to rest his tones, and this communicates to the vocal organs, not force, but the control necessary to a good tone. This tone, free from breathiness and on a firm base, feels the freedom to move more easily from pitch to pitch, even although the range is small. Practise with certain exercises will produce flexibility in the voice organs and the agility of the voice will be apparent in the general speech.

9. Rhythmic fluency. When the speech and voice-organs are free to act, fluency will come, and with the training already spoken of, it will be rhythmic. Many mechanical devices have been used to gain this rhythm of speech, but in the experience of the writer none have brought as good results as those which have come from the use of the piano. The pauses which we make at the end of a phrase, or of a completed statement, depend upon the thought, and this is the only way in which they can be made intelligently. However, practise with the piano helps very much in the grouping of words.

In the hands of one who understands its application to speech-teaching, the piano can be made more nearly a substitute for the ear than anything which has yet been used to help the voices of the deaf and to perfect their speech.

"RHYTHM, JOY, AND BEAUTY"

"Life is joy." To a little child who is entirely without a knowledge of the saddening experiences of life, except imaginary ones, all is joy, and with it comes the spontaneity of thought which does not need to be cultivated, but merely directed. Thus we have almost ready at our hand these elements of spontaneity and vivid mental action which are necessary to expressive, agreeable speech.

"Personality should be beauty." No one who has love in his heart can fail to see some beauty in a little child, however plain may be his features. It is the *soul* that appeals to us. Happy is the man who sees good in his fellow-beings!

Does it not lje with us, then, to so develop and use these three elements—*rhythm, joy,* and *beauty*—that the speech of our pupils shall be musical, at least to a greater degree than it has yet been made?

A writer, in speaking of the speech of hearing persons, has said: "You *ought* to sing, but you *must* speak"; yet "speech," the writer goes on to say, "is the last of the arts to be studied as an art; but of late such research and such advance in standards have been made as announce the day near when the music of speech 'shall be heard in all the land.'"

Let us strive to fulfill this prophecy in the speech of our deaf pupils.

Supt. Sidney J. Thomas, of the Texas School for the Deaf, died on May 7, after a brief illness with appendicitis. Mr. Thomas had held the position of superintendent a little over two years, but had previously taught at the school for some time following his college course. Mr. Thomas will be succeeded in his duties by his wife, who is thoroughly familiar with the details of the position.

PHYSICAL TRAINING FOR THE DEAF CHILD

BY MARGARET A. DALY
Day School for the Deaf, Detroit, Mich.

THE modern ideal in the education of the deaf child is to make him as much like the normal individual as possible. In a recent article in THE VOLTA REVIEW a writer very aptly expressed this ideal as a process of "thinning the wall," which silence has formed about the child. He must talk like the normal person and "hear" by the speech-reading method. This much is now almost universally conceded. Let us add to this ideal, "He must approach the standard of the best physical specimens of normal humanity."

The typical deaf child has more physical defects to overcome than the average hearing child. Very often the sense of balance has been adversely affected by the same cause that produced deafness. This partial loss of balance is apt to result in a shuffling gait; then the tendency to thrust the chin forward in a questioning attitude is also characteristic. Coordination of muscles makes the forward position of the head have, for its accompaniment, the depressed chest and protuberant abdomen.

Since the orally educated deaf child is not only called upon to compete with his hearing brothers and sisters in the same field of studies, but has the additional task of learning to talk and speech-read, it is evident that he needs more vitality and better nerves to stand this additional strain.

PHYSICAL TRAINING MAY AID SPEECH WORK

If precious school time is to be given to physical training by the deaf child, it must contribute to his two great needs—speech and speech-reading. This will be accomplished if the training is of the right sort. It ought to be planned and supervised by experts in both physical education and the education of the deaf. Miss Ethel Perrin, supervisor of physical training in the Detroit public schools, is the author of a course of study which, with slight modifications, is used in the Detroit Day School for the Deaf. One of Miss Perrin's assistants supervises the work by a monthly visit to the school. These teachers are experts in their line, and they coöperate with Miss Gertrude Van Adestine, the principal of the Detroit Day School, in adapting their methods to deaf children. The work daily is carried on by three of the regular staff of teachers.

RHYTHM TRAINING FIRST

The beginning of the work with the youngest children is training in rhythm. The teacher plays a piece of music with a very decided tempo; the children stand with their hands on the piano, "listening" and watching; then they clap their hands in time to the music with their backs against the piano. The tempo is changed and the children master the new rhythm in the same way. When they show proficiency in recognizing the various sorts of simple rhythm, they are directed to stand in a line about two feet away from the piano. The musician is told by the director to play a march. After three or four bars the director says to the children, "Clap," and they do so in rhythm with the music until the teacher gives the command "Stop." Other rhythms are reproduced in the same way. Children who at this point have difficulty are sent back to the piano to renew their tactual images.

As another form of action, the pupils are taught to reproduce these rhythms in appropriate dancing steps. When a march is played, the children mark time by raising the entire foot from the floor and bending the knee. In this exercise the ball of the foot is the last part to leave the floor and the first to strike it on the return. This does much to overcome the habit of dragging the feet. The marching may be accompanied by exercises of the arms. The teacher marches ahead of the class and performs

ONE METHOD OF ADDING INTEREST TO RHYTHM REPRODUCTION

the exercises and the children imitate her.

GAMES AN IMPORTANT FEATURE

In addition to the marching and simple dancing steps, games are also a part of the physical training at this stage. One game that is very popular with our little ones is "Did you ever see a lassie"? It is played in this way: One child stands in the middle of a circle, and the other children march around him in time with the music. The teacher sings while the children watch her lips:

"Did you ever see
A lassie, a lassie, a lassie,
Go this way, and that way,
Go this way, and that way"?

In the meantime the child in the center illustrates some movement which he chooses for the others to imitate. During the singing of the last two lines the children stand in place and imitate the movements of the child in the center.

This game, as do all the musical games, helps to cultivate the sense of rhythm. It develops initiative, because the children have to decide quickly for themselves the movement they are going to illustrate. Their speech-reading, no matter how rudimentary it may be at this stage in their education, cannot but be improved by watching the teacher's lips to discover when to stop marching and begin imitating the child in the center.

Besides musical games of the above type, there are simple games of competition, which are valuable not only because of the healthful activity they necessitate, but also because they help to inculcate concretely the "fair-play" idea. If, in one of these games, a child seeks to take a victory which he has not fairly won, the public opinion of his little group soon shows him the error of his ways. To get the positive side of this idea, the children are encouraged to applaud the victor.

Every physical training exercise, in whatever grade, is accompanied by a breathing exercise. The windows are opened during the entire lesson, and

"HEAD FIRM! RIGHT FOOT FORWARD—PLACE!"

whenever it is possible the work is taken out-of-doors.

INTERMEDIATE CLASS WORK

The intermediate class in physical training is formed from the children in the second and third grades and a few of the larger children from the first grade. This class combines the dancing steps, learned in the beginning class, into the typical folk dances. Many of these are to be found in Elizabeth Burchenal's "Folk Dances and Singing Games." The children continue the playing of games and begin formal gymnastics. At this stage they are sufficiently familiar with speech-reading to be able quickly to read and respond to the necessary commands.

The threefold object of formal gymnastics, as stated in Miss Perrin's "General Instructions," is as follows:

"1. The educational effect of quick response to command.

"2. The corrective value of training in neuro-muscular control and good postural habits, through insistence upon the right form of work.

"3. The hygienic value of rapid successive contractions of the large groups of muscles and of deep breathing, thus assisting the functional power of the vital organs."

The intermediate class has its work in a very large, well-lighted kindergarten room. The pupils form in a long line in front of the piano, and at the command, "Class, attention!" they assume the correct standing position, with heels together, toes slightly turned out, weight on balls of feet, arms stretched downward with palms resting against outer side of thigh, chest high, chin slightly drawn in, and "standing as tall as possible." While the children are thus standing at attention, the pianist plays a march. The director waits until the children have mentally grasped the rhythm, then she commands, "Mark time! March!" The children respond by marching in place, beginning with the left foot, flexing the

GRAMMAR GRADE GIRLS IN ÆSTHETIC DANCING

"Dancing of both the folk and the æsthetic type should hold a prominent place in any plan of physical education for the deaf. . . . Perhaps its most salient advantage is that it is expressional—another means of development through the expression of beauty. . . . The qualities which the children are repeatedly expressing in the dance—balance, rhythm, and harmony—are the qualities which are at the basis of all successful living. Its direct personal effect may be seen in the faces of the children as they brighten with happiness and sweeten and refine under its influence."

knees well, and pointing the toes downward.

The next command is "Forward! March!" The pupils march around the room and the teacher inspects the line, and marches beside the children who need either correction or praise. Usually the corrections are: "Chest up! Chin in! Softly! Think of the music!"

PRAISE AND CORRECTION.

The praise for the children who are trying is just as essential as the corrections. It is well to praise honest effort, even though it falls short of perfection. "That's a fine chest!" "That's very much better than you did yesterday." Such remarks will accomplish as much as a long, tiresome drill.

The class is next formed by command into twos and then into fours. These are then directed to "Mark time in place," and to "Right face!" or "Left face!" as the conditions of light and space demand. They are then in position for their formal gymnastics. The Swedish system is used. A few minutes are devoted to commands, with quick and accurate bodily response from the children. Then follow exercises of the head, leg, arm, trunk, a percipitant, and a breathing exercise.

In developing a new exercise the children's attention is first directed to the appearance of the command on the lips. Then the teacher performs the exercise. Next the children read the command and obey it, and finally faulty postures are corrected. When this has been done the teacher should not perform the exercise with the children. Too much imitation at this stage destroys initiative and prevents the children from getting all the mental development possible. The same is also true of the marching. When a child is "out of step" a teacher defeats her own purpose when she corrects him by clapping her hands in rhythm to the music. This prevents the pupil from concentrating his mind on the vibration of the piano and leads him to simply imitate the movement or the teacher's hand. "Think of the music" is a much better method of correction.

These children are also able to accompany their dances with words descriptive of the various steps, recited in rhythm with the piano. "Pop Goes the Weasel!" is a dance of this type. While they execute the various movements the children say:

"Step, and step, and step, and point,
"Step, and step, and step, and point,
Step, bend,
Step, bend,
Pop goes the weasel"!

HIGHER GRADE WORK

The children in the grades from the fourth through the eighth also have formal gymnastics, but of a more difficult nature. The games, in order to meet the need of the altruistic instinct now developing, are those which permit of team work. "Newcombe" is the favorite out-of-door game of both boys and girls.

The girls continue the folk dances. Of these the favorites are the "Hungarian Dance," "Tarantella," "Harvest Dance," "Varsovienne," and the "Highland Fling."

In addition to the folk dancing, the girls take up æsthetic dancing. This work is begun by relaxing exercises based on the five different positions of the hands and feet in dancing. Waltz music is played, and the class follows the teacher through the various movements rhythmically. Attention is called to the extending of the ankles, to the curved position of the arms, and the correct poise of the head. Gradually the girls acquire the necessary grace of movement and are ready for the æsthetic dancing. Good material of this sort is to be found in the "American Beauty Series," the "Motor March," the "Mazurka Series," and the "Caprice Series."

DANCING MOST BENEFICIAL

It is believed that dancing of both the folk and the æsthetic type should hold a prominent place in any plan of physical education for the deaf. Its mere hygienic value would justify this opinion. It engenders pleasant emotions, and psy-

chologists tell us that pleasant emotions have the physiological effect of expanding the body and promoting the circulation. It is exercise taken in the play spirit and having back of it the impetus of pleasure. The children like it.

Perhaps its most salient advantage is that it is expressional—another means of development through the expression of beauty. It is just as potent for this purpose as painting or drawing, and it requires less training for successful execution. The qualities which the children are repeatedly expressing in the dance—balance, rhythm, and harmony—are the qualities which are at the basis of all successful living. Its direct personal effect may be seen in the faces of the children as they brighten with happiness and sweeten and refine under its influence. Furthermore, rhythm is the only element of music which the deaf are capable of appreciating and expressing. By aiding their development along this line we are "thinning the wall" and allowing them to approach the normal by a means which otherwise would not be available.

GERMAN SCIENTIFIC SOCIETY OF NEW YORK DISCUSSES THE EDUCATION OF THE DEAF

THE meeting of the German Scientific Society, held in New York City in April, was entirely given up to the discussion of the education of the deaf. There were about seven hundred present. Dr. Otto Glogau, an otologist of New York City, delivered an address in German, in which he outlined the oral method of teaching the deaf and called the attention of the audience to the ways in which they could be of service to those of their acquaintance who are deaf or have deaf children. He strongly urged them to use their influence to obtain for every deaf child an education by the speech method under purely oral conditions. His address was followed by a brief discussion by Prof. John Dutton Wright, of the Wright Oral School for the Deaf, in New York City. He summarized as follows the points that Dr. Glogau made, and he would like the audience to carry them away with them:

First, the little deaf child should begin its education by the speech method not later than five years of age.

Second, the child that is made deaf by illness or accident should at once be placed under the care of a trained and experienced teacher of the speech method. The necessity of prompt measures in such cases cannot be urged too strongly, for without immediate and skillful attention the child who has learned to speak before becoming deaf will lose that speech. But if prompt and intelligent attention is given, the child's speech can be retained, lip-reading can be learned, and education can go on without interruption.

Third, a very large number of pupils in our public schools are struggling along with defective hearing in the regular classes of forty or fifty with a single teacher. They should have special attention given them in small groups of fifteen or twenty. Examination of the more than half a million pupils in the public schools of New York City revealed the fact that one in each hundred has sufficiently defective hearing to be seriously handicapped in the regular work of the school; yet these pupils are in no sense candidates for an institution for the deaf. They do not belong there and should not be sent there. Most of the public school buildings in New York contain about two thousand pupils. There are, among these two thousand, twenty pupils whose education should receive more special and personal attention than is possible when one teacher is responsible for forty or more pupils.

Fourth, there is the very large number of adults who have grown more or less deaf after maturity. These people should be encouraged to form the habit of constantly watching the lips of those addressing them, and taught to supplement their imperfect hearing by use of their eyes in speech-reading.

Both Dr. Glogau and Mr. Wright made another very important point in urging that greater attention should be paid in institutions for the deaf to the residual hearing of the pupils. The trouble is that this training and developing of the residual hearing requires much individual attention, and that is not possible under the present organization of the large institutions.

The practical demonstration of the results of modern methods of educating the deaf consisted of an address by Miss Helen Keller and conversations between two more of Professor Wright's former pupils, Mrs. Kate Graham McGinnis and Mr. Horace R. Moorhead, and Professor Wright and members of the audience.

Miss Keller spoke for twenty minutes in German and then about fifteen minutes in English. Most of the people in the audience were equally familiar with both English and German, and later in the evening many of them from all parts of the house reported that they were able to understand Miss Keller, Mrs. McGinnis, and Mr. Moorhead, whether German or English was spoken.

CO-OPERATION BETWEEN SCHOOL AND SHOP

BY FRANK H. COGSWELL

Instructor in Woodworking, School for the Deaf, Jacksonville, Ill.

IN MANY institutions where both grade schools and vocational training shops are provided, there has been a lack of definite co-operation between these two branches. There is in each more or less of indifference toward the work of the other, and often a mutual lack of understanding as to methods and aims. Yet the need of interest and co-operation between the two is plain, when we consider that the work of one properly supplements that of the other, and that both are working for the same object—the equipment of the child for life's duties.

The chief reason for any lack of mutual interest existing may be found in the divergent views of different individuals as to the best means to accomplish a given object. In the present instance this divergence of views is made more pronounced by the fact that the grade school is an old established order, whose members are more or less conservative, "viewing with alarm" any innovation, while the vocational shops comprise a new order whose members are radical and impatient of the restraints of ancient usage.

Therefore, for these forces to work together with any harmony, they must have as a rallying place some common point of interest on which all can meet. We cannot agree on anything so general as the course of study. There will always be some difference of opinion about what subjects to teach and how they should be taught. But one thing is necessary to any scheme of education, and that is a child to teach. Methods will change, but children will always be much the same, and their needs will change only as civilization improves and industrial processes develop.

"TEACHING THE CHILD" *vs.* "TEACHING THE SUBJECT"

Since the child is the one constant quantity in the educational scheme, as well as the one who is expected to benefit from the educational process, it may be stated as a fundamental proposition that *the child is more important than the study*. According to Webster, we may teach the subject we are presenting or we may teach the child. To some this might seem a trifling distinction, but, rightly considered, it marks the turning-point between success or failure in education. If we help the child we have done well. If we teach our subject ever so well without leaving something with the child that he can use, we have done very poorly.

The failure of the ordinary school system to give its pupils a sufficient quantity of practical knowledge in available form for profitable use is shown in various ways, but most conclusively in the existence and continued spread of vocational or trade schools. The trade school represents an effort to supply a lack in the grade school. The highest degree of success in supplying this lack can only be attained through close and sympathetic co-operation. The grades supply the child with a theoretic knowledge of the basic tools of the mind. The shops afford the test of practical application to work with hand tools under conditions as nearly as possible like those met with in actual industry.

EARLY SPECIALIZATION DESIRABLE

Much labor has been expended with meager results, and much time lost to both teacher and pupil in trying to teach the child subjects not within the range of its capacity, and hence not likely to ever be of material use to it. In this age of specialization only a few of the common branches taught in the schools are really common knowledge to all persons in all walks of life. When these common branches are passed, the education that will most benefit the individual is that which is directed to discovering and developing that faculty in which he

is naturally qualified to excel. In an institutional school, where it seems desirable for all pupils to take some one of the special branches of training offered, it is desirable to begin even in the lowest grades to seek out the bent of the child's mind, and conduct his studies, so far as practicable, with reference to strengthening his natural talents and leading him into that branch of special training for which his abilities fit him. Misfits often result in the shops from boys being detailed to work for which they have neither taste nor aptitude. This is one place where the school and shops could co-operate more fully with profit.

There are certain branches taught, such as paper cutting, cardboard construction, clay modeling, basketry, water-color drawing, that to most pupils are without value except for the "mental development" they stimulate. There is nothing more important than the development of mental power, but too much has been made of disembodied mental power, totally disassociated from all material things and processes. The kind of mental power the world's industries are crying for is that which is trained for a definite purpose—not just because it is a good thing, but because it is good for a certain clearly defined and premeditated use.

GRADE TEACHERS SHOULD NOTE INDIVIDUAL APTITUDES

Now, if the primary industrial processes like those named above are conducted with a view to not only developing the mind, but also drawing out and discovering the qualities of the mind, they may be made to serve a very practical purpose in leading the child to a knowledge of what his mind is fit for. Suppose that the teacher of these branches notes carefully just what strong faculties of mind are brought out by them, and that the information so acquired is used as a basis in choosing the most suitable line of vocational training for him. For example, if he has a good eye for colors it would indicate one qualification for the painter's trade. If he shows skill with his hands and is careful in combining materials, it will show some evidence of fitness for work in the shoe shop or cabinet shop. If he is a good speller and shows some literary taste, these qualities are likely to be appreciated in the printing office.

If he has none of these qualities, others will be detected that will give some hint of his probable line of usefulness. By a comparison of the strong points brought out by his various branches of school work, a fairly intelligent conclusion can usually be reached as to the line of life work for which the child is properly fitted. By the same token he could be placed in some branch of vocational training connected with the institution for which he has some visible fitness and from which he is likely to derive practical benefit. This would seem to be a proper and logical way to connect the alleged mental development of some of these elementary industrial processes with their practical application to every-day use.

"BIRD-SHOT" EDUCATION

If these processes are not concentrated in this way for the realization of some definite object they lose the force they should have, and become altogether too scattering and fragmentary to justify their use. Imagine a man cast away on an island, and that all he saved from the wreck was a gun and a supply of powder and bird shot. Game of all kinds is abundant. But he soon finds himself limited to birds, because his ammunition will not bring down larger game. If he aims in the general direction of a flock of birds he is pretty apt to hit some bird, but he cannot tell in advance which, nor which shot will do it, and it is only a bird when he gets it. Now, when birds fail he will either starve, or, if he has sufficient force of character, he will attempt to devise means by which to fuse his bird shot into bullets, so that he may get larger game.

Many a child is turned out to make his way in life with a bird-shot educa-

tion. His teachers have said, "These things are all good for the development of his mind, and some of them will be pretty sure to hit somewhere when he goes off." In practice he finds that this scattering education does not enable him to hold important and well-paid positions, but that he must accept the less skilled forms of labor, or else must, in a technical school or the harder school of experience, fuse his bird shot into a workable knowledge of a given subject.

All the various things taught in school and shops are good and useful; but not all are useful to the same child. And while the plan here outlined can by no means take each pupil, decide his future for him, and turn him out at the close of his schooling irrevocably committed to a vocation selected for him, it is entirely practicable to show him within limits what he can do with his natural endowments, and so to send him out into the world with a definite plan of procedure. This is the place for the divergent elements of the school and shops to get together and score a magnificent success.

THE FOUNDATION IN THE SCHOOL-ROOM

Your work in the schools comes first and is the foundation of all that comes after. Shape the foundation to fit the size of the child's mental structure.

We of the shops must build on the foundation as you furnish it. May I not urge that you specialize in the child's education, so far as it is practical to do so? For instance, when, by the analysis of his primary industrial work as outlined above, you find he has a distinct qualification for woodworking or similar trades, give special emphasis to those phases of your branches which will serve him in utilizing his natural talents. Drill him thoroughly in the use of the foot rule and all the subdivisions of an inch, down to 16ths. Drill him on the different parts of a circle so thoroughly that when he is told to draw a circle of a given diameter he will not insist on using the diameter as a radius to describe it. Branches like apothecaries' weight, longitude and time, and alligation can very safely be sacrificed for such work as this. Then when we come to the shops, we shall try to teach him habits of accuracy and attention to details, of forethought in planning means to ends, that will react favorably on his work in the grades. We will, where possible, supply material for illustration in your work where it comes in touch with ours. The making of apparatus for physics or other grade work, when it is of a character that can be done in the shops, is not only good practice for the boy in the shop, but gives him added interest in the grade lessons that he is helping to illustrate.

CO-OPERATIVE OPPORTUNITIES

Where mutual interest prevails, the shop man may often be able to point out where the child has failed to grasp his grade work in its application to industrial processes, thus giving the teacher an opportunity to give special drill on his weak points. An invaluable aid in promoting mutual interest and fellowship is the exchange of frequent visits between school and shop. The shop man who has any teaching instinct will gain many things, including a better understanding of his boys, by seeing them at work in school and talking them over with their teachers. The teacher, who has a conception of the practical application a pupil will have to make in actual practice of the lessons learned in school, will, by seeing the child at work in the shop and observing the methods used there, be able to gain many helpful ideas that will enable her to shape class work so as to arouse keener interest on the part of the pupil and leave more valuable results in his mind.

In short, approximate success in education is only to be reached by doing our best to find out what the capacity of the child is and what work he is by natural endowment best fitted for, and then all working together to the single end of preparing him to do that thing well.

All children need to be helped to find themselves—to discover what it is they are able to do best—and the deaf child needs this help most of all.

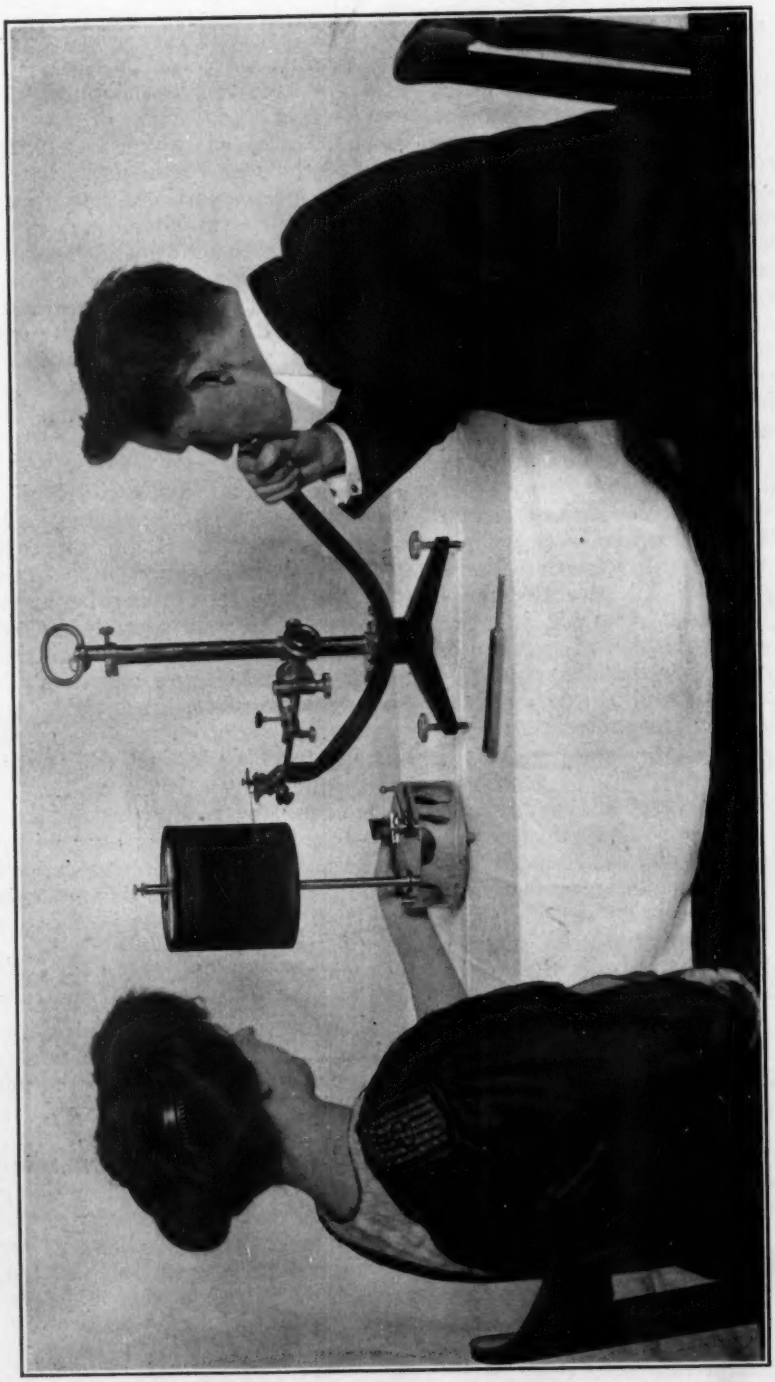


FIG. 1.—GRAPHIC RECORDS OF SPEECH

The apparatus in use, showing the straw point tracing a record on the rapidly revolving cylinder

THE VOICES OF THE DEAF: GRAPHIC RECORDS OF SPEECH*

BY E. W. SCRIPTURE, PH. D. (LEIPZIG), M. D. (MUNICH), COLUMBIA UNIVERSITY

THE first extensive researches with graphic records of speech were those of the Abbé Rousselot on one of the French dialects. Many further studies of French and other languages have come from his laboratory of experimental phonetics at the Collège de France. The method is available for the most varied researches on voice and speech in the various languages and dialects, on their modifications by defect and disease, on the peculiarities and troubles of singers, on the correctness of oratorical speech, etc. In short, there is hardly a problem of speech, from correcting a German's mispronunciation of English to the analysis of a maniac's ravings, to which this method has not or cannot be applied with profit. Strangely enough, no attempt has ever been made to apply it to the speech of the deaf.

A sheet of glazed paper is fastened around a metal cylinder and is smoked over a gas flame. The cylinder is then placed on a clock-work (Fig. 1) that can revolve it rapidly and regularly.

The recording apparatus is shown in detail in figure 2. When a person speaks into the mouthpiece E, the vibrations and puffs of air pass down the rubber tube D to the metal tube C. A sheet of rubber J is tied over the end of the tube at A. A metal lever L is connected to the rubber by the link K. The vibrations and puffs of the voice are transmitted by the rubber to the lever.

G and G′ form an arrangement for placing the axle of the lever nearer to the link K; this regulates the enlargement of the vibrations. A vertical adjustment is obtained by F. The tube is held by a clamp to the heavy tube H. This is fastened firmly on a rod (Fig. 1) by the screw I. A long, light straw, with a fine horn point, is placed on the lever L.

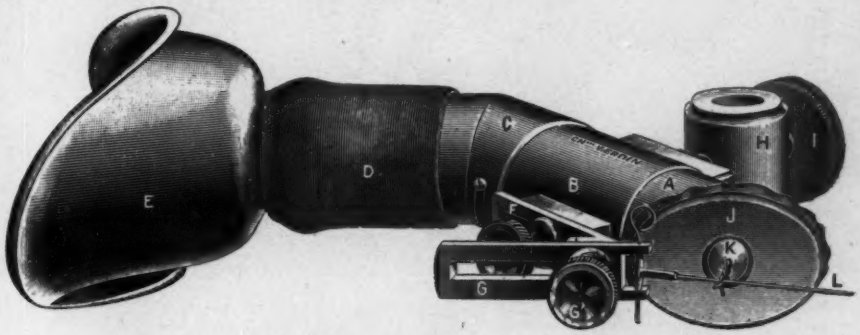


FIG. 2.—MOUTH RECORDER, TOP VIEW

This mouth recorder, devised by Rousselot, is the best of any I have used. It is advisable to use a long rubber tube between the recorder and the mouthpiece.

When a record is to be made, the drum is wound up and set in motion. A tuning-

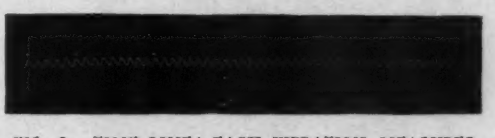


FIG. 3.—TIME LINE; EACH VIBRATION MEASURES 1/100TH OF A SECOND

fork of 100 vibrations a second is held so that a fine point or bristle on the end of one of the prongs touches the smoked surface. This draws a wavy line, each wave of which measures 1/100th of a second (Fig. 3). The speed of the drum

* This is the third of a series of articles by Dr. Scripture. (See THE VOLTA REVIEW for April and May, 1913.)

is thus always known. The point of the recorder is then placed to the drum. The person speaks the desired words and the recorder is moved away.

The top line of figure 4 gives a record of "potato," spoken normally. It begins with a straight line, due to the occlusion of the "p"—that is, to the period during which the breath is stopped by the closure of the lips. The sudden movement of the line upward is due to the explosion of the "p" as the lips are opened. The explosion is so sharp that the lever makes several large vibrations before it comes to rest. The small waves are a record of the vibrations of the vowel "o." These are suddenly cut short and the line drops for the occlusion of the "t." The "t" has an explosion, but it is not so strong or so sharp as that of the "p." The small waves that follow are a record of the vowel "a." The second "t" has an occlusion somewhat shorter and an explosion somewhat sharper than those of the first "t." The word ends with the vibrations of the vowel "o." In the figure the lettering is in the international phonetic alphabet; the sound of the second vowel is indicated by "e."

The second line of figure 4 gives a record of the same word by C. F. (15 years of age, totally deaf since 7 years of age, under oral instruction for 8 years). We notice in the first place that the word was spoken far too slowly. By applying dividers, or a scale, to the last vowel, "o," we find that it is fully twice as long as it should be. This last fact was explained to C. F., whereupon he made the record shown in the third line of the figure. In the effort to correct his drawl he made the vowels even a little shorter than the normal ones. Comparison of line 3 with line 2 shows that the explosions of the "p" and the two "t's" were made quickly and snappily instead of breathily, as in line 2.

The same pupil was asked to read from a book. The pronunciation of "she" seemed peculiar. He was asked to make a record. The result is shown in the second line of figure 5. A normal record was then made (first line of figure 5) and shown to him. He at once understood that he did not emit breath enough for the consonant, so he tried that alone. The result is given in the third line. He had no difficulty in understanding that he had first made an occlusive (namely, "t") and then put a fricative after it instead of producing a fricative alone. A further attempt is shown in the fourth line. The fricative sound is somewhat too long, but otherwise it is correct. One

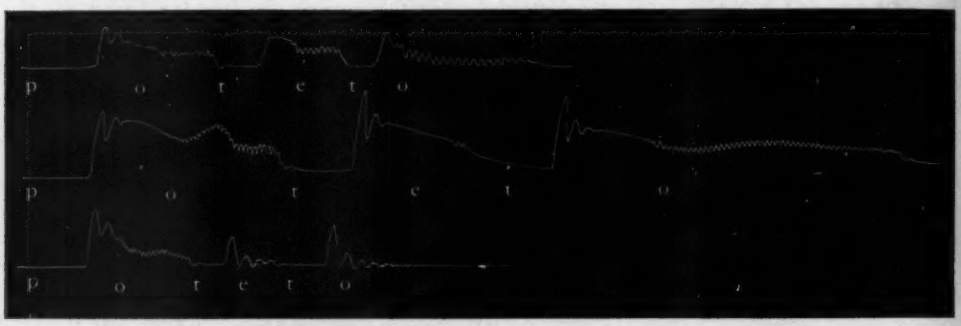


FIG. 4.—RECORDS OF "POTATO," IN PHONETIC NOTATION (poteto)

The small waves are the record of the vibrations of the voice during the vowels. The straight lines show where the breath was cut off by the occlusives "p" and "t." Each occlusion ends in an explosion, shown by the sudden rise of the line with the large vibrations. First line: normal record. Second line: record by C. F.: the vowels and the occlusions are too long and the explosions are long and breathy. Third line: spoken by C. F., after comparing his record with the normal one."

other fault was involved in his pronounciation, namely, the use of "s" for "sh." He first said what sounded like "tse" (tsi). He had made a "t"-sound with an "s"-like explosion. After the record in the third line he was told not to say "s," but "sh."

The first line of figure 6 shows a normal record of "too much." The occlusion of the "t" and its explosion are followed by the vibrations of the first vowel. The line for the "m" is at the zero level, because the lips are closed and no air issues; there are faint vibrations, because "m" is voiced. The vowel "oo" is registered by strong vibrations. The line falls suddenly as the tongue closes the mouth passage for "ch"; it rises and remains up a while for the last part of "ch." We note that the record of "ch" consists of an occlusion, followed by a breathy sound.

The second line of figure 6 shows a record of "too much" by A. O. (17 years old, totally deaf since birth, under oral instruction for 4 years). The initial "t" had no explosion and the last sound was a simple occlusion, like a "t" without the explosion. The normal record was explained to him. After half an hour's practise he made the record shown in the third line. The initial "t" has a highly exaggerated explosion. For "ch" he has an occlusion, followed by a fricative sound, but the change from the former to the latter is too sudden. This occurred because he used the front-shut instead of the top-shut position of the tongue for the first part of "ch" and also because all his speech movements were nervously exaggerated. The correction of his over-enunciation and of the voiceless "m" (shown by lack of vibrations in the records) was reserved for another occasion.

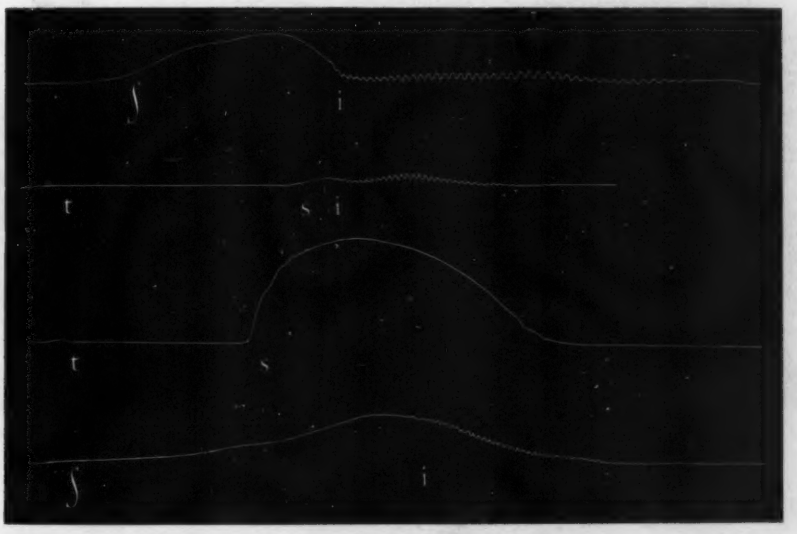


FIG. 5.—First line: record of "she" spoken normally, in phonetic notation (ʃi); during the fricative "sh" the line rises gradually. Second line: record by C. F., which sounded like "tₛe" (tₛi), with a very brief "s"; the straight line records the long occlusion for the "t"; the normal explosion for "t" (see Fig. 4) is lacking; it is replaced by a weak fricative sound indicated by the slight rise in the line. Third line: C. F. attempts to make "sh" like that in the first line; the result is "ts," the "s" being exaggerated. Fourth line: C. F. pronounces "she" correctly, except for making "sh" a trifle too long.

It was noticed that instead of "How do you do"? A. O. said something that sounded like "How ho hou ho"? The record of the last word, "do," spoken normally, is shown in the top line of

figure 7. The occlusion, the explosion, and the vowel waves are clearly marked. The record of the last word in the phrase spoken by A. O. is shown in the second line. It shows a brief fall in the line, due to a slight inspiratory gasp which he was accustomed to make. This is followed by a slight rise in the line that records a short and rather weak "h." The "h" ends in some vibration. The following piece of straight line, with faint vibrations, corresponds to a correctly made occlusion for "d." The record indicates the nature of the boy's mistake. Instead of ending the preceding vowel by closing the tongue against the palate, he inspires through his mouth, blows out a short "h," starts his larynx vibrating, and only after all this does he use his tongue for "d."

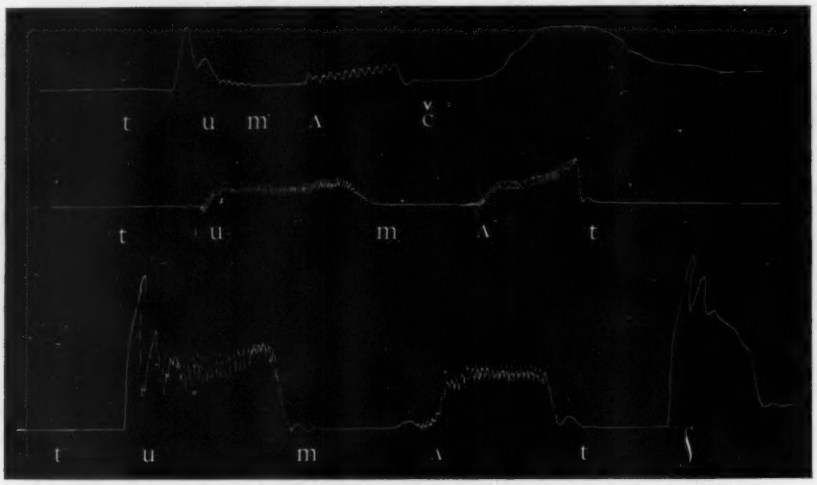


FIG. 6.—First line: "too much" (tumʌč), spoken normally. The occlusion and the explosion of "t" are similar to those in Fig. 4. The vibrations of "oo" are followed by the weak vibrations of "m." The strong vibrations of "u" are followed by the occlusion, with long fricative ending of "ch." Second line: record by A. O.; there is no explosion for "t"; the "m" is unvoiced; the word ends with an occlusion, namely, "t" without its explosion. Third line: record by A. O., after studying that in the first line; the initial "t" has an explosion; the "m" is not voiced; the final sound is "t," followed by "sh"; the entire record is exaggerated owing to over-enunciation.

The record of normal "do" in the first line was then shown to him. His attempt at this word alone is shown in the third line. The occlusion of the "d" is present, but there are no vibrations and there is no explosion; the sound was rather a "t," with no explosion. The vowel vibrations are correctly made.

It was easy to get him to make an explosion for the "d" (fourth line), and fair success was achieved in introducing voice (fifth line). The best record obtainable in the half hour at disposal is shown in the fifth line. The "d" is not perfectly voiced and its explosion is exaggerated.

This method is of such practical value that it will probably be introduced in many places. In using the apparatus, the recording drum must run so rapidly that the surface of the smoked paper travels at the rate of at least 100 millimeters a second. Its speed must be very regular. There are several very elaborate drums made in Europe that fulfill these conditions; they cost from $150 to $250. At my suggestion, an American company has put a special spring into their model. I find that this drum is very regular and is better adapted for speech

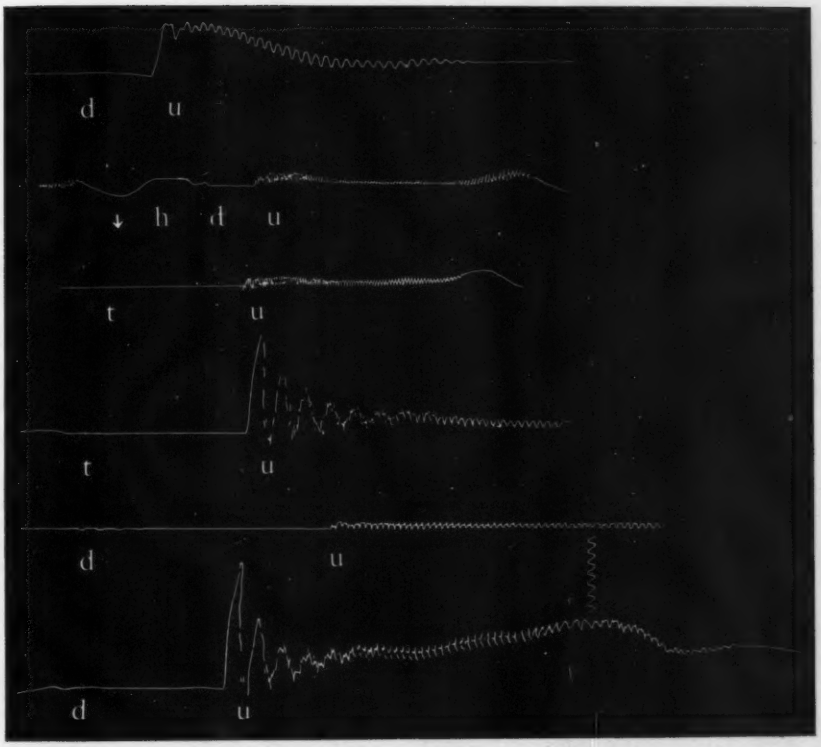


FIG. 7.—First line: "do" (du), spoken normally. Second line: last word of "How do you do?" by A. O.; instead of "d" there are a short inspiration, a short breath, and a short "d," without explosion. Third line: "do," by A. O.; the occlusion lacks vibration (it is unvoiced); it does not end with an explosion. Fourth line: A. O. succeeds in introducing an explosion after the occlusion, but it is still unvoiced. Fifth line: A. O. voices the occlusion, but omits the explosion. Sixth line: A. O. voices the occlusion fairly well; the explosion is too violent.

work than any other. Its cost is only about $30.

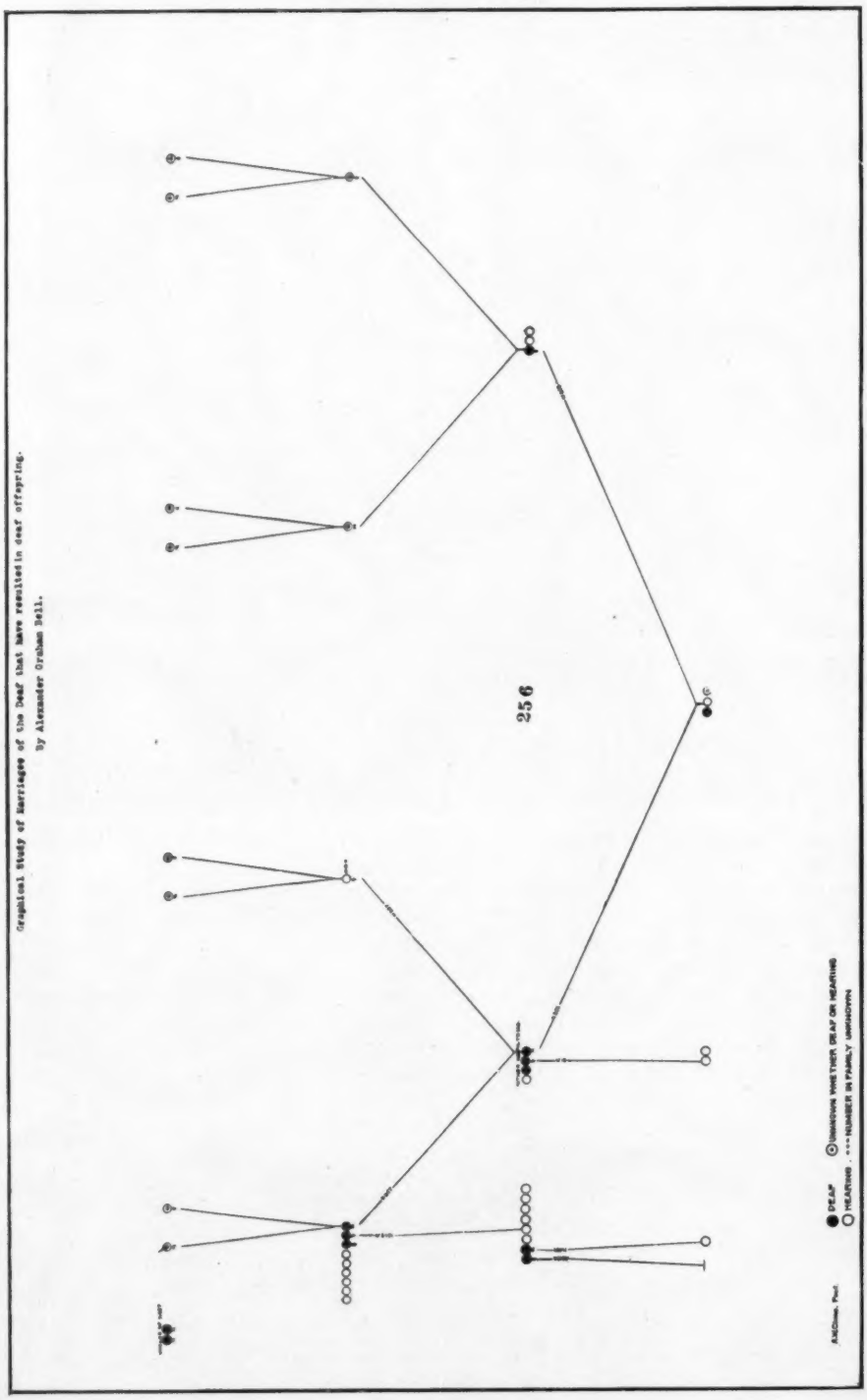
The tuning-fork of 100 vibrations is also to be obtained of this company; a statement should be demanded that the correctness of the pitch is guaranteed.

To smoke the drum it is removed from its axle and placed on a special support. A sheet of glazed paper, gummed on one end, is placed around the drum. A gas flame is held closely under it while it is turned rapidly.

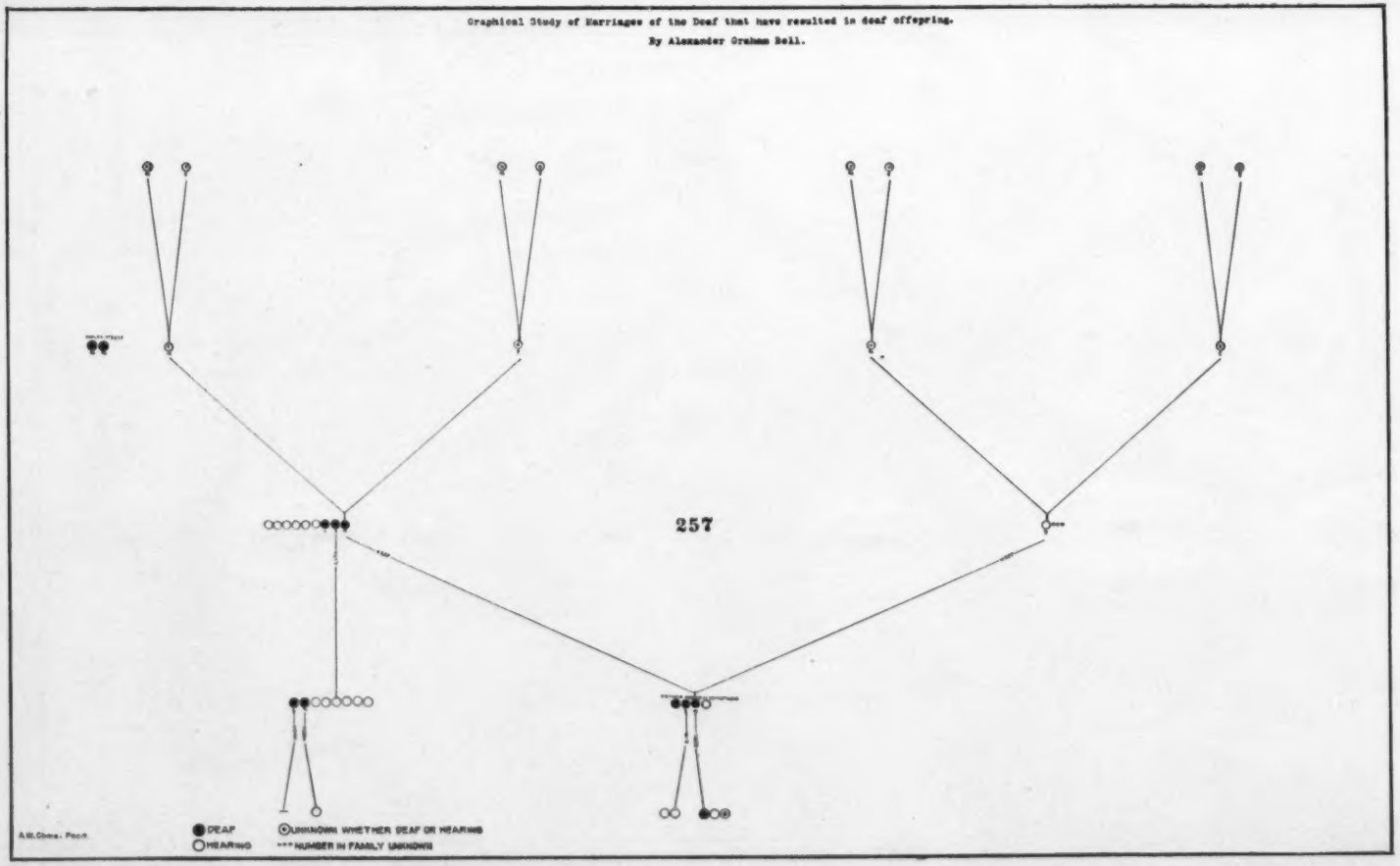
After a record has been made, the paper is cut off and passed through a pan containing a solution of shellac. The solution of shellac should be so weak that the paper will dry rapidly and not remain sticky, and so strong that when it is dry the black will not come off when rubbed by the thumb.

GRAPHICAL STUDIES OF MARRIAGES OF THE DEAF

BY ALEXANDER GRAHAM BELL


Graphical Study of Marriages of the Deaf that have resulted in deaf offspring.
By Alexander Graham Bell.
256
DEAF
HEARING

MARRIAGE NO. 256. REPORTED IN "MARRIAGES OF THE DEAF IN AMERICA," BY DR. E. A. FAY. PUBLISHED BY THE VOLTA BUREAU, WASHINGTON, D. C.


Graphical Study of Marriages of the Deaf that have resulted in deaf offspring.
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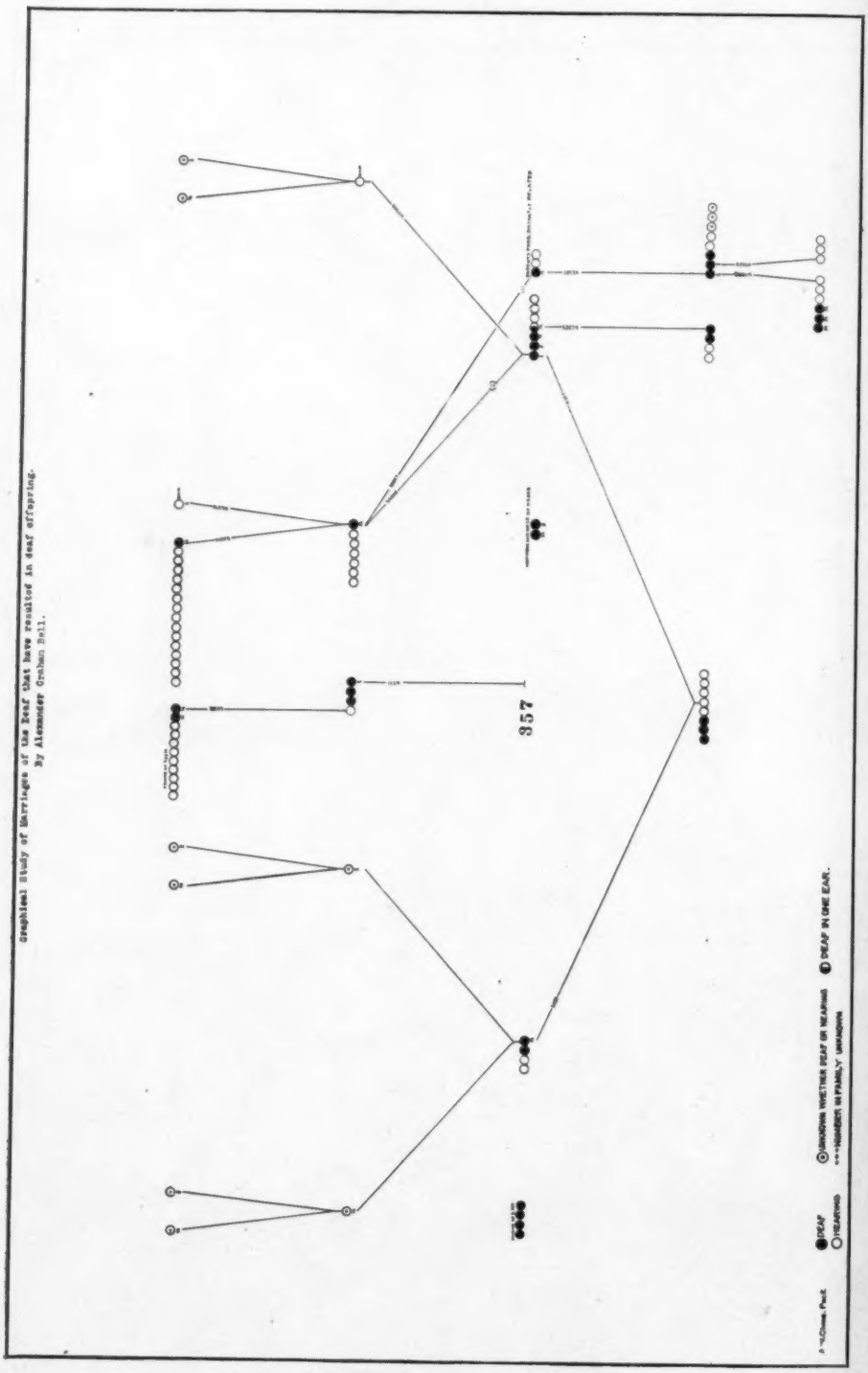
257
DEAF
HEARING
UNKNOWN WHETHER DEAF OR HEARING
*** NUMBER IN FAMILY UNKNOWN

MARRIAGE NO. 257. REPORTED IN "MARRIAGES OF THE DEAF IN AMERICA," BY DR. E. A. FAY. PUBLISHED BY THE VOLTA BUREAU, WASHINGTON, D. C.


Graphical Study of Marriages of the Deaf that have resulted in deaf offspring.
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357
DEAF
HEARING
DEAF IN ONE EAR.

MARRIAGE NO. 357. REPORTED IN "MARRIAGES OF THE DEAF IN AMERICA," BY DR. E. A. FAY. PUBLISHED BY THE VOLTA BUREAU, WASHINGTON, D. C.

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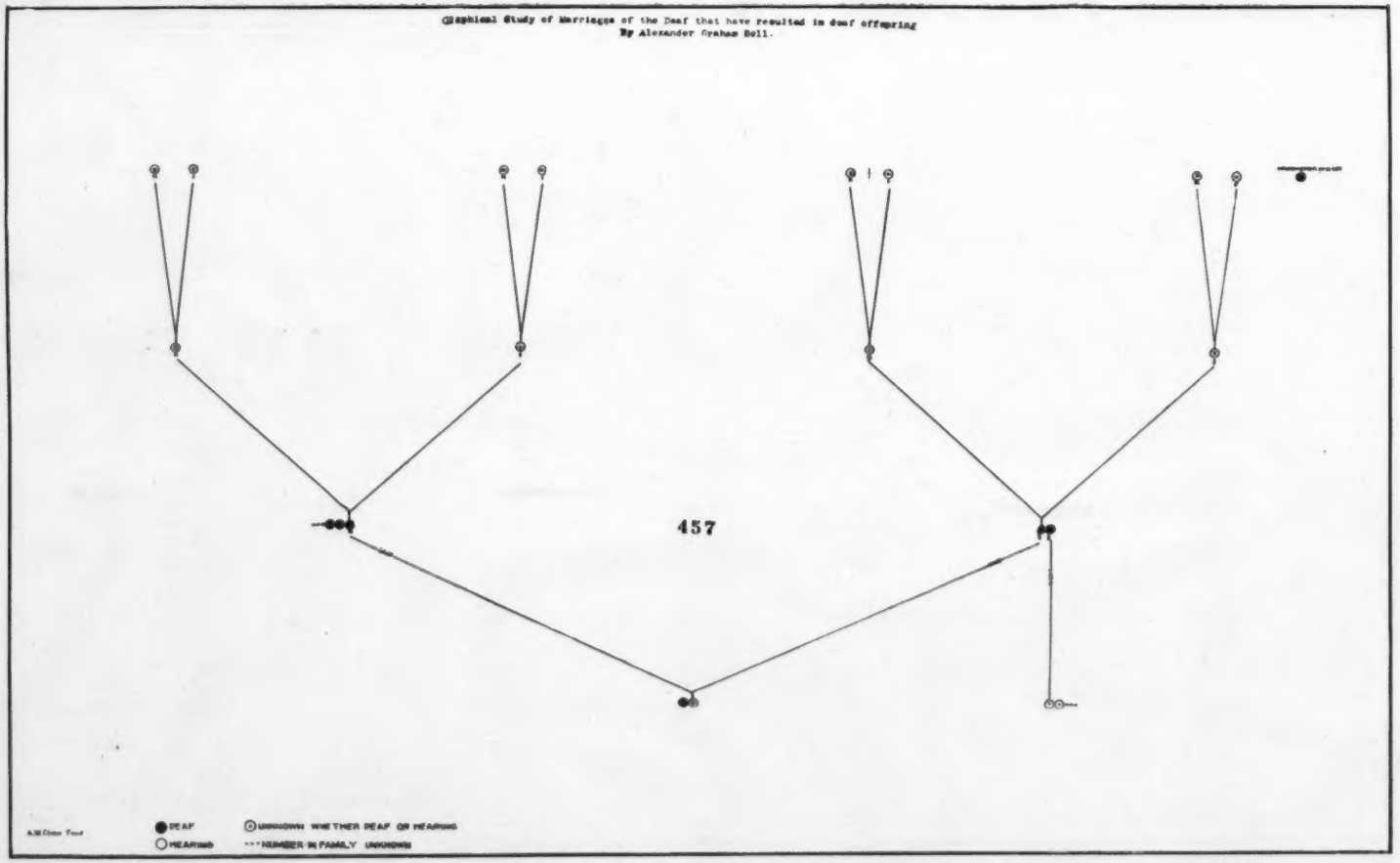
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457
DEAF
HEARING
UNKNOWN WHETHER DEAF OR HEARING
NUMBER IN FAMILY UNKNOWN

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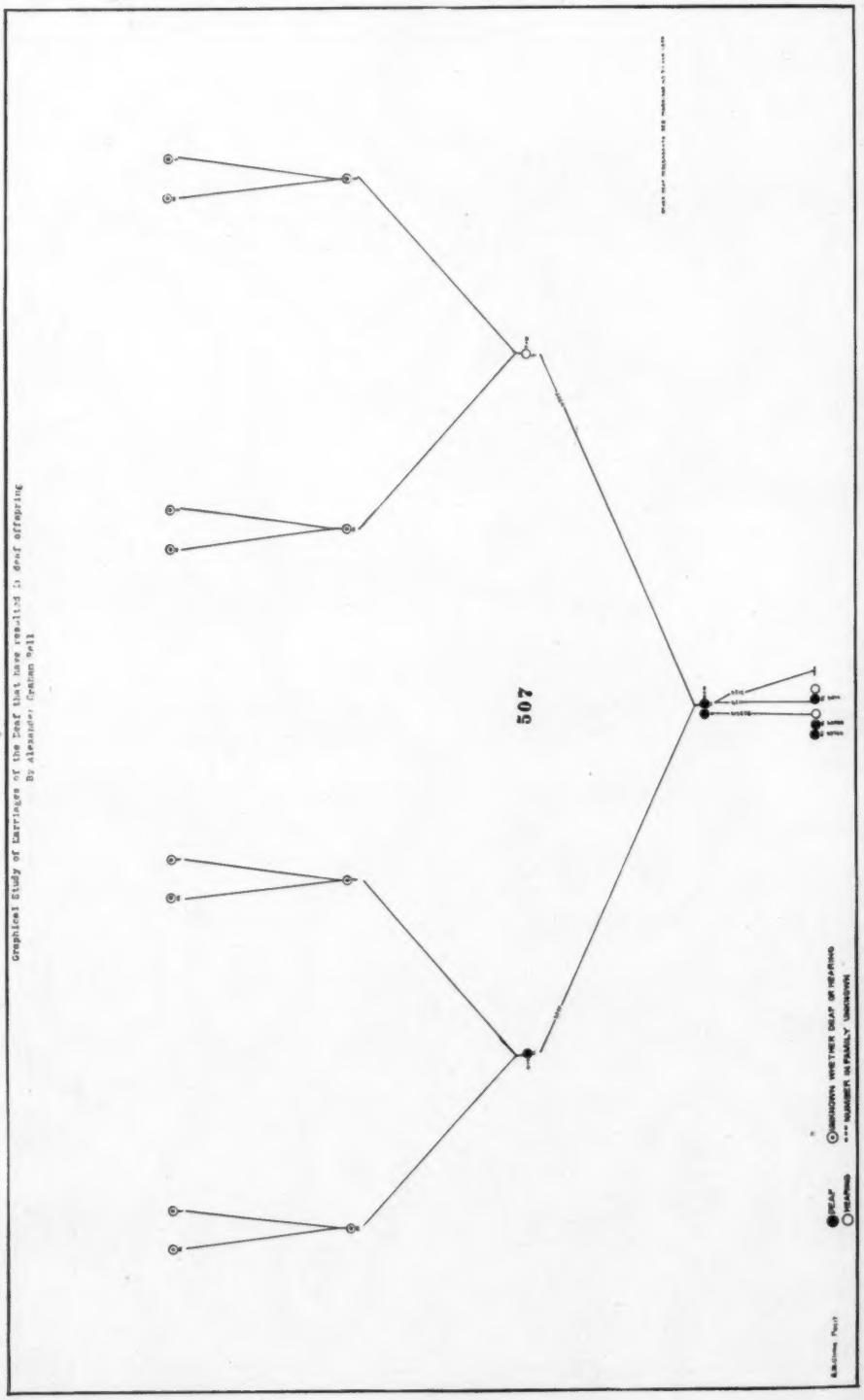
Graphical Study of Marriages of the Deaf that have resulted in deaf offspring
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507
DEAF
HEARING
UNKNOWN WHETHER DEAF OR HEARING
NUMBER IN FAMILY UNKNOWN

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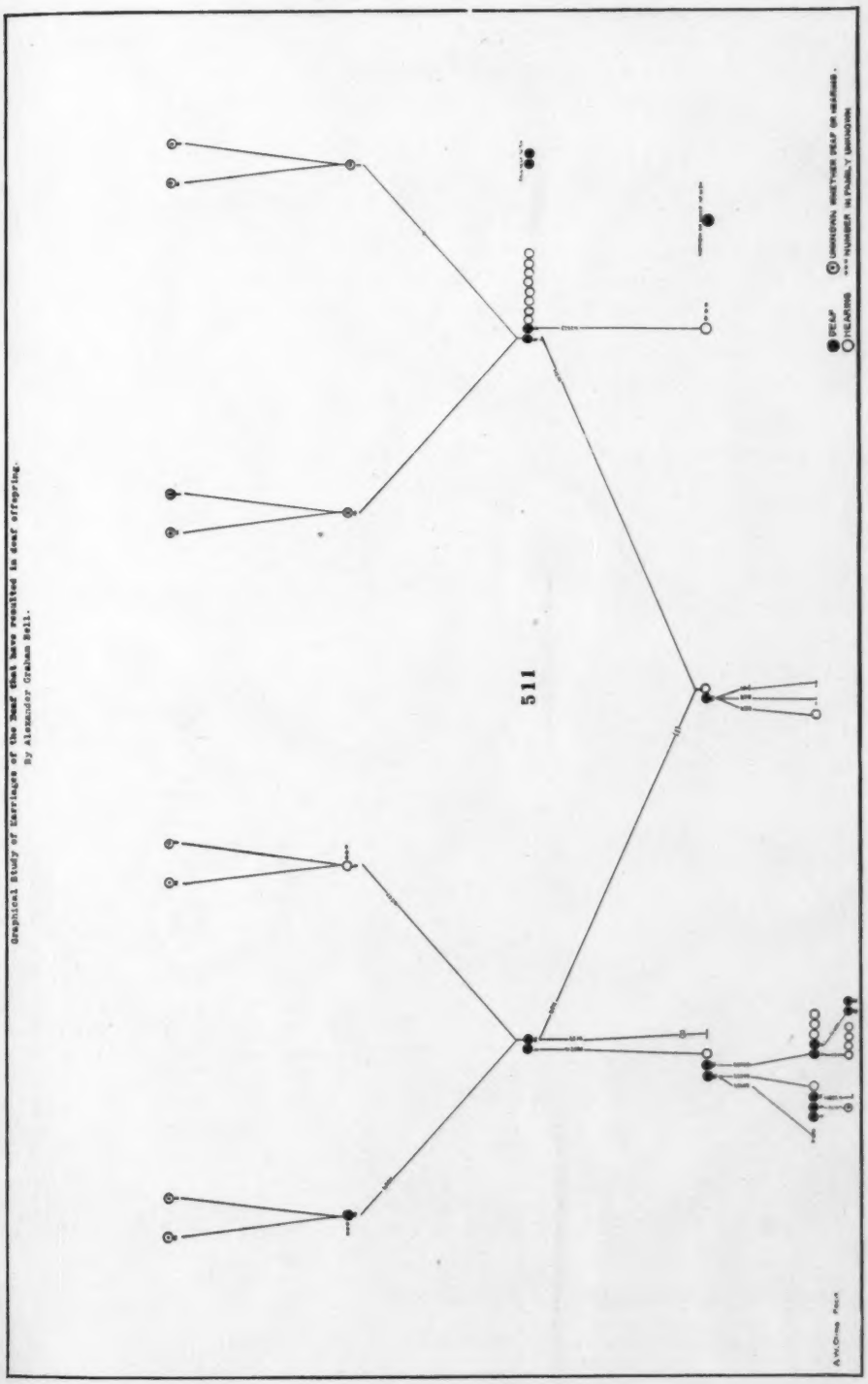
Graphical Study of Marriages of the Deaf that have resulted in deaf offspring.
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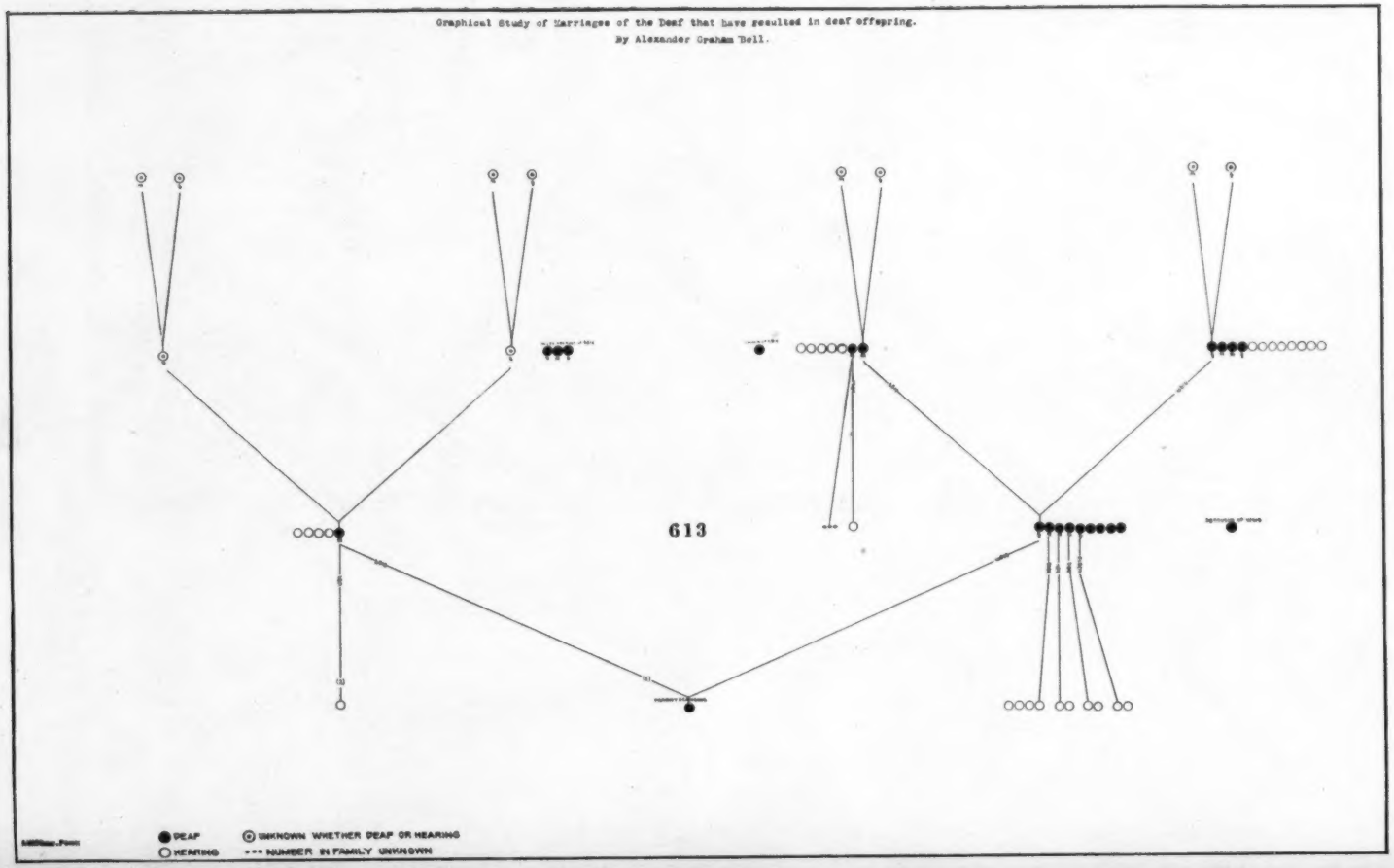
511
DEAF
HEARING

MARRIAGE NO. 511. REPORTED IN "MARRIAGES OF THE DEAF IN AMERICA," BY DR. E. A. FAY. PUBLISHED BY THE VOLTA BUREAU, WASHINGTON, D. C.


Graphical Study of Marriages of the Deaf that have resulted in deaf offspring.
By Alexander Graham Bell.
613
DEAF
HEARING
UNKNOWN WHETHER DEAF OR HEARING
NUMBER IN FAMILY UNKNOWN

MARRIAGE NO. 613. REPORTED IN "MARRIAGES OF THE DEAF IN AMERICA," BY DR. E. A. FAY. PUBLISHED BY THE VOLTA BUREAU, WASHINGTON, D. C.

THE ATTRACTIVE SCHOOL-ROOM

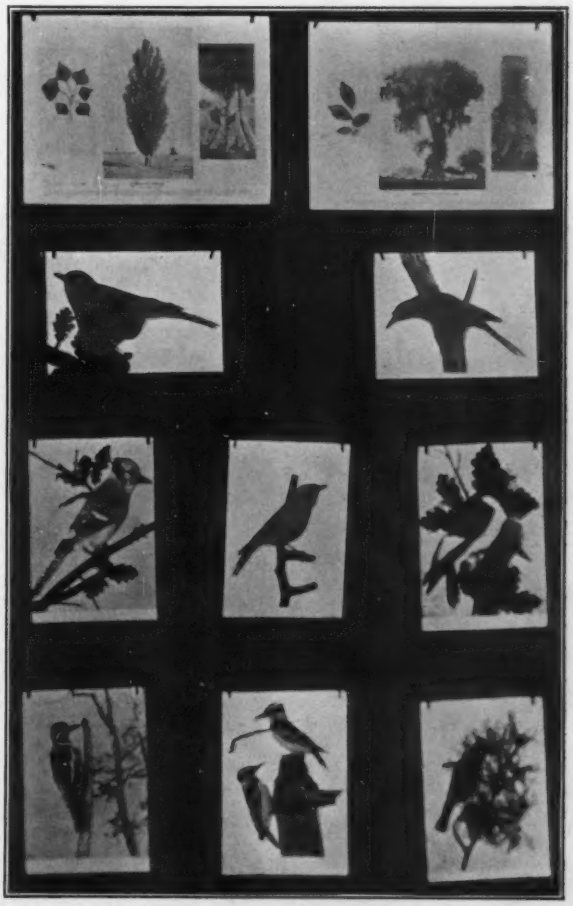
BY HANNAH I. GARDNER
Day School for the Deaf, Appleton, Wisconsin

THE attractiveness of a school-room depends largely upon the attitude of the teacher and pupils towards the things in the room and the responsive attitude of things toward teacher and pupils. In some rooms the pictures smile, plants grow and blossom, and blackboards talk; in others the pictures frown, plants fade and die, and blackboards mumble indistinctly.

All school-rooms should have good ventilation, light and heat, good furniture, good pictures, and good tones in walls and woodwork. But having all these a school-room may not be at all attractive, and having nothing but these it may be extremely so. The children may be trained to be interested in the things which otherwise they would take for granted and see without noticing. The essentials of a good room may be taught by calling the attention of the pupils to the fact that their room is always warm in winter, that the sun shines in at the windows, the air is pure, the furniture suitable, the pictures pretty, etc. This is often unconsciously taught by the teacher, and as unconsciously applied in later life by the pupils.

The pictures on the walls, if not the personal property of the pupils, become their intellectual property by reason of the interest they take in them and the information they acquire concerning them. If they did not pay for the tinting of the walls, it is theirs through their appreciation of it and their care not to have other decorations that will not harmonize with it. These things, as much as their books, belong to them.

There should be a good bulletin-board for the current events of school life; this week a drawing lesson prettily mounted, next week penmanship; again, the picture of some great man on his birthday, pictures illustrating the seasons, or the geography lesson. If it is not convenient to have a bulletin-board, fasten a wire at the top of the blackboard from one door-casing to another, and hang on this the pictures or work you wish to bring to the attention of the pupils.



"A GOOD BULLETIN BOARD FOR THE CURRENT EVENTS OF SCHOOL LIFE"

MARRIAGE NO. 613. REPORTED IN "MARRIAGES OF THE DEAF IN AMERICA," BY DR. E. A. FAY. PUBLISHED BY THE VOLTA BUREAU, WASHINGTON, D. C.

"A 9-INCH BORDER REPRESENTING WOODLAND SCENES"

LIVING THINGS A WORLD OF WONDER

Plants donated by the children and cared for by them make pleasant windows more so, and cannot fail to attract. In the spring germinating seeds in tiny flower-pots—one for each pupil—are a source of unfailing interest. The little flower-pots may be a lesson in clay-modeling, sun-baked and coated with shellac; or they may be merely egg-shells. Many school windows are supplied with shallow galvanized iron trays, and one of these filled with wet sand will keep these tiny flower-pots moist from Friday till Monday. A seed-tester, showing the germination of various seeds under similar circumstances, furnishes information for the older pupils and, by the aid of a small pocket microscope called a linen-tester, opens up a world of wonder to all.

Even more attractive, because it contains more life, is an aquarium. It need not be an expensive one. A home-made aquarium containing the common water life of the neighborhood is the most interesting and instructive of all.

Some windows are much improved by white muslin curtains; but they are not sanitary unless frequently washed, and the school-room that does not absolutely need them is better off without them. Where the windows are unusually high, the upper panes may be decorated with an imitation of leaded glass windows. The pattern of the design is traced on dark cardboard with double lines. It is then cut out, the cardboard forming the outline only of the design, the lead in the window. The appropriate colors of tissue paper are then pasted over the back of the design and the background. If the window to be covered is large, the background may be further divided by a lattice-work. This work is too difficult for most children, but the older ones could help to do a good deal of it.

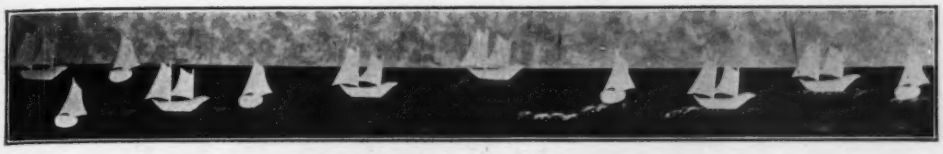
BLACKBOARD POSSIBILITIES

All of us use our blackboards for daily work, both by pupils and teacher, and few have much to spare for decoration. One square for a calendar or a picture representing the season may be made very artistic if the teacher has the gift of drawing. Charcoal and chalk make effective black and white pictures, and colored chalk is very pleasing to the younger children; but for many teachers this work would be burdensome, and perhaps not particularly decorative when done. Most of our blackboards, however, are high enough so that we can spare twelve inches or more at the top and still have left as much as the pupils can make use of. There are innumerable ways of decorating these few inches that add very much to the pleasure of the pupils and the attractiveness of the room.

Wall-paper borders cost the least effort on the part of the teacher and may be had in varying widths and pleasing designs. A nine-inch border representing woodland scenes costs about two cents a yard, and sometimes you can get the same scene colored differently for the different seasons. One delightful wall-paper border represents Mother Goose characters. In ten feet eleven stories are illustrated, and the little children are delighted when they act them out and repeat the verses. This is a more expensive border, the ten feet costing seventy cents, which is perhaps the price of a book of equally good illustrations. But a book has the disadvantage of being closed and put away most of the time, of being used by only one or two pupils at once, and of being soiled much sooner than the blackboard border.

STORIES IN DECORATIONS

In the fall nothing delights the children more than brownies and jack-o'-



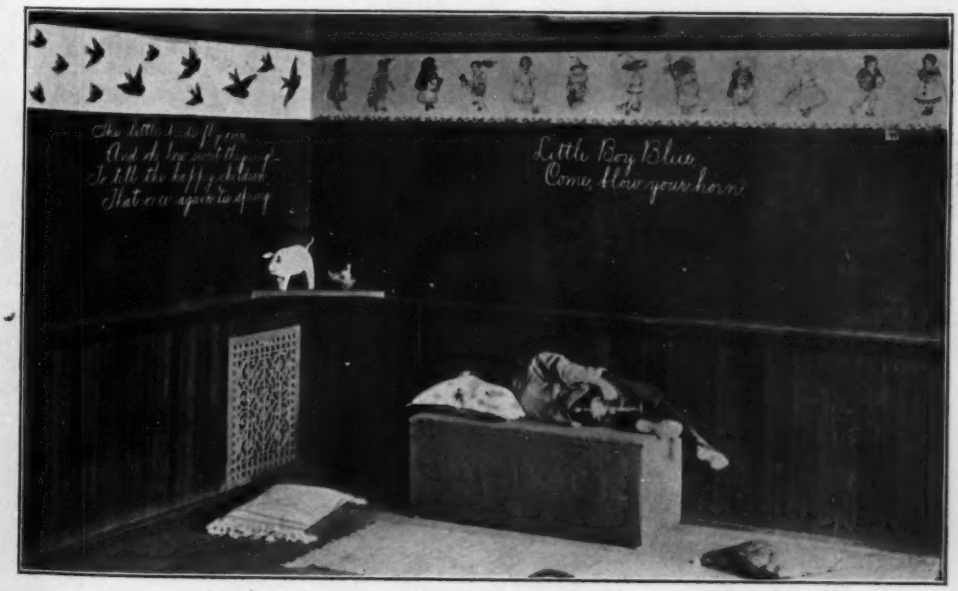
"SAIL-BOATS ON TWO SHADES OF BLUE WALL PAPER"

lanterns. A poster picture of this kind may not be a thing of beauty to the adult eye, but the children watch to see how many new cuttings have been pasted on since yesterday; they shriek with delight and imitate the antics of the brownies, and the youngest child in school is moved to say, "Mama, see!" the first time his mother visits school after this wonderful production has been put on the board. In one school this decoration was liked so well that it was left on all through November, and when it was time for Christmas decorations the pumpkin field was turned into a forest of firs and each brownie carried home a Christmas tree.

A flock of birds on a background of pale blue, or sailboats on a background of two shades of blue wall-paper or chalk, are good cutting lessons and pretty decorations. If wall-paper is used and left on during the summer vacation, it fades; but, if the border is to be kept, a little blue and white chalk will cover the calm sea with white caps and change the once clear sky into fleecy clouds, where you can almost see the wind that fills the sails and "blows the birds about the sky."

Crepe-paper napkins furnish many pretty designs for school-room use, but this paper cannot well be handled by little children unless it is first pasted on a thin wrapping paper. This double paper is then cut and pasted on the desired background. One can also obtain decorated rolls of crepe-paper with larger designs. In all borders where wall-paper is used for a background the paper is pasted and the design put on afterwards. To remove, use warm water and a soft wooden ruler.

Every year Nature furnishes us with her cast-off decorations, and each teacher



"DEAF CHILDREN LOVE STORIES"

"THE TEACHER'S DESK MAY BE AN ORNAMENT TO THE ROOM"

is the recipient of bouquets of gorgeous autumn leaves. These lose much of their brightness when pressed, but a coating of shellac restores some of the freshness and they make pretty decorations. If there is a sand-table in the school not in use, and if the sand is dry enough, place a branch of leaves on the table and sift the sand onto it until it is covered. The sand absorbs the moisture and the leaves become dry without being taken off the twig and pressed flat. Coat the leaves with shellac and fasten the branch to the bulletin-board. The oak leaves respond best to this treatment because they stay on the twig till the following spring.

When the snow begins to fly, substitute snow stars for the autumn leaves. The snow stars should be made of very thin paper (onion skin or the like) so that the children can cut it when folded many times.

"AND WE MADE IT OURSELVES"

Deaf children love stories and picture books, especially stories with pictures; and how much nicer to tell stories in a cozy corner than in a chair set squarely in front of a stiff row of seats. The older boys may make a wooden box in the manual training department, or a dry-goods box may be utilized. Cover this with burlap and have the children stencil a pattern on it. The little ones may sew rags for a rug and a cushion cover. Perhaps in some schools the pupils can weave the rug. Another cushion may be made of burlap and stenciled. Then when the story hour comes the children can sit on the floor or on the seat and forget everything but the story.

The .teacher's desk, though a work-table, may also be an ornament to the room, and its neatness an example for the children. It may have a table runner hemmed and stenciled by the pupils, or a blotter pad made by them, and a vase of flowers or a plant on one corner.

A capable janitor adds much to the attractiveness of a school-room; but very few janitors are expected to clean erasers, blackboards, and chalk-troughs every day, or to water plants and clean the plant-trays. If the children are allowed to do this work, they notice and appreciate the cleanliness that results from their efforts, and the few minutes it takes are not a burden.

Decorations are attractive in so far as they arouse interest and no farther. It is not the money spent on decorations; it is not the work the teachers do in that line that makes a room attractive. It is the work the pupils do, the ownership they feel for the things in the room. "We made that," "This is my cutting and that is yours," "It is ours"; this is what gives the home feeling to a school-room.

All decorations may be made of double value to the older children by telling them the cost and amount of material used, letting them do the buying if possible, showing them how the inexpensive material is made artistic by a little work,

etc.; in fact, this is teaching household decoration in a simple way.

In our zeal for decoration let us not forget that our school-rooms are work-rooms, and that all decoration should, as far as possible, be allied to the work, and should be subservient to convenience and comfort.

THE FLAG OF THE NATION

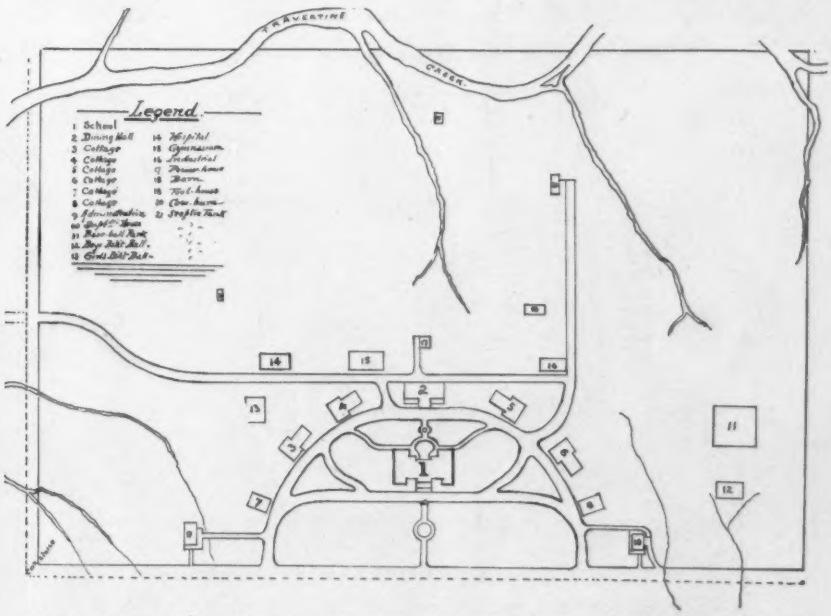
Finally, let us remember that our schools are for the making of the American citizen, and so no school-room is complete without the American flag—not merely as a thing of beauty, not only as a decoration, but as a help in teaching patriotism. And I would like to suggest that we make our school-room flags peace flags; the flag of the nation with a border of white, making it not the symbol of a dead past of wars and victories, but the present emblem of a peaceful nation. This flag teaches us that patriotism means love of country, and that our duty today is to *work* for it, not *fight* for it; to *live* for it, not *die* for it. This spirit cannot but help to make our school-room "a thing of beauty and a joy forever."

EXTENSIVE IMPROVEMENTS FOR OKLAHOMA SCHOOL

AT THE meeting of the Oklahoma Legislature this spring appropriations totaling over $150,000 were ratified for the use of the State School for the Deaf at Sulphur. The plans now approved for this school should make it one of the most up-to-date institutions of the kind in the United States. The scheme provides for a group of 17 buildings, tastefully located on a crescent or semicircle, as shown in one of the pictures in this article. Immediate provision has been made for six of the 17 structures.

The building scheme is what is known as the cottage plan—separating the children according to ages and making their living more home-like.

The buildings are reinforced concrete and brick. The face bricks are large, cherry-colored, vitrified paving blocks, laid in white mortar, rodded out so as to make a receding joint. The whole group of buildings are plain, substantial structures, built for use, and almost without ornamentation. The buildings front south and are located on a 60-acre tract

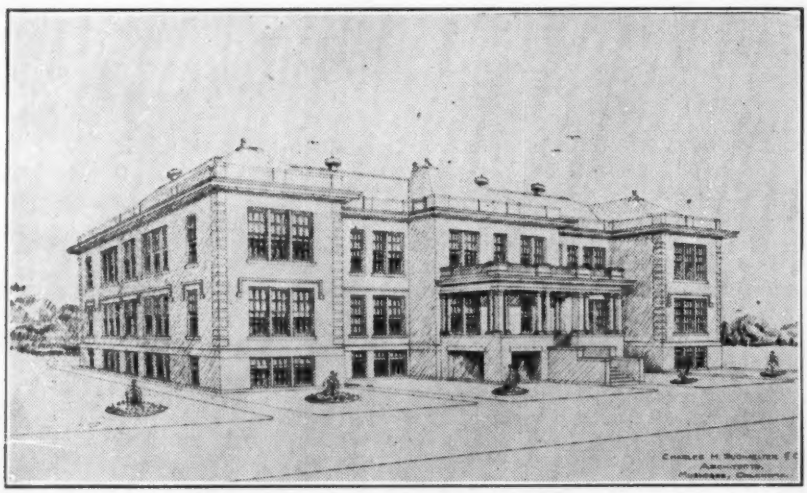


LANDSCAPE PLAT OF GROUNDS AND BUILDINGS, OKLAHOMA SCHOOL FOR THE DEAF

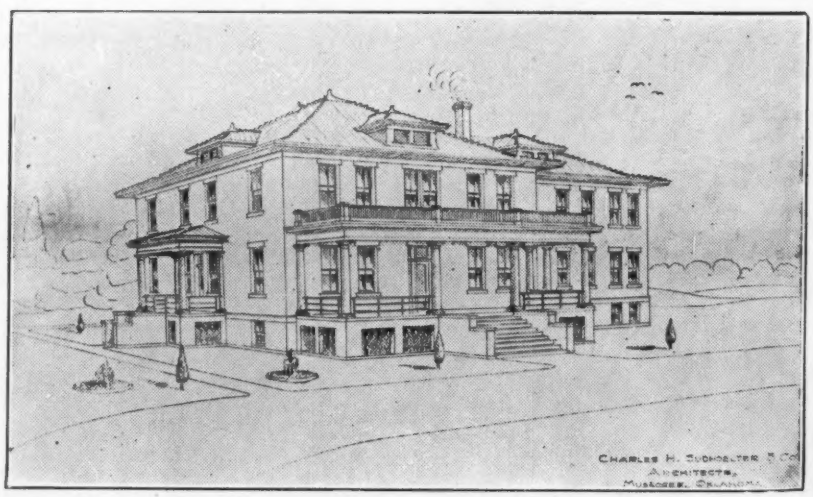
adjoining the most beautiful part of Platt National Park and lying just outside the eastern limits of the city of Sulphur, which donated the land to the State.

The main building in the foreground is to be used exclusively for school work. It is 86 x 149 feet, high basement, and two stories, as may be seen from the picture. On the two upper floors there are 28 rooms, varying in size from 12 x 24 to 20 x 24, which will be used for school-rooms, principals' rooms, teachers' rest rooms, libraries, etc. The halls and corridors range from 8 to 12 feet. There are stairways at each end of the building; also closets, modern toilets, and other conveniences. The basement, which is high and light, will be used for study-rooms, play-rooms, kindergarten rooms, store-rooms, etc. The pupils will enter from double doors on either side in the rear. All toilets are on corners, thoroughly lighted and ventilated. The building has no "innovations"—nothing that may be said to be new or different from any other building of its kind. It is a simple structure, almost severely plain, without extravagance in either exterior or interior. It seeks to provide convenient, comfortable facilities for teacher and pupil, that both may do their best work.

In the rear of the school building is the dining hall. The basement will contain kitchen,



MAIN BUILDING, OKLAHOMA SCHOOL FOR THE DEAF



ONE OF SIX COTTAGES, FOUR OF WHICH ARE TO BE ERECTED AT ONCE

pantries, bakery, store-rooms, cooling-rooms, employés' dining-room, bed-rooms, etc. On the first floor, at the east end, are the Superintendent's dining-room and the teachers' dining-room. In the center and in the west end are two dining-rooms for the large and small children. In the second story is the chapel, with inclined floor, stage, dressing-rooms, etc. On either side of the dining hall are three cottages. These are 50 x 60 feet, with wings 35 x 45 feet, two stories, and high basement. Those on the west side are for girls of different ages, and those on the east for boys. Each cottage contains study-room, reading-room and library, parlor, sitting-room, play-rooms, bedrooms, dormitories, lockers, supervisor's room, wash-room, generous closets, tub and shower baths, swimming pool, toilets, etc. At a glance, the picture shows that these cottages will make attractive homes. Each cottage will comfortably care for 75 children.

On one end of the crescent is the administration building, and on the other is the Superintendent's residence. In the rear of the crescent are the industrial building, the power-house, the gymnasium, and the hospital. Farther back are the tool-house, carriage-barn, dairy-barn, and other outhouses. No detailed plans have been made of these buildings, except the power-house.

PHONETICALLY WRITTEN STORIES IN THE MELVILLE BELL SYMBOLS

THE BUREAU SUPERINTENDENT'S PERSONAL VIEWS

EVERY attempt to belittle, in any manner, the economic and social value and importance of teaching speech to the deaf, irrespective of race or color, is a crime against humanity that may have to be atoned for in sorrow and shame.

* * * * * * *

Teaching speech and speech-reading to the deaf is a profession that any woman may well feel honored in being a member of; for this branch of the profession was founded by very capable American women, and has been kept at so high a standard by women whom all the world loves to honor that eminent foreign experts go home and tell their countrymen that "the orally taught deaf of the United States are the best taught deaf in the world."

* * * * * * *

Each year since 1867 there has been a decided increase in the number of women employed in the teaching of speech and speech-reading to deaf children, both in the schools and to private pupils. Yet when we estimate the total number that have been thus employed since the opening of the little pioneer school at Chelmsford, in 1860, and then attempt to portray all that has been achieved in promoting the teaching of speech to the deaf during this brief period of less than half a century by relatively so small a number, and the far-reaching influence of these efforts, the results, seemingly, possess a miraculous character. Viewed from the standpoint of the highest educational authorities of the olden times, it was the achievement of the impossible. It is a victory that not only completely revolutionized methods of instruction, but that will tend to promote the intellectual welfare of all children, whether deaf or hearing, during all time.

* * * * * * *

Who can total the harm that may have followed the long-continued use of the word "dumb" in combination with the affliction of deafness? In its right place it is a very good word, but it has no human appellation, and its use would probably have been discontinued long ago but for the influence exerted by one or two eminent sentimentalists, who strongly objected to its elimination because of the many touching memories it brought up. It may be recalled that Dr. E. A. Fay presented some very strong resolutions at the Providence meeting, urging the elimination of the words "dumb" and "mute" from the corporate titles of the schools, and that these resolutions were unanimously adopted.

Possibly much of the social unrest of the present day is due to the continued wrong use of the very good word "capital" in paragraphs where the word "employer" would have been the proper word. Had orators, whether demagogues or statesmen, always been careful to refer to the "employer" and the "employee," in place of arraying "capital" against "labor," a far more intelligent understanding of the real situation and of the economic elements entering therein might prevail. Let us all strive to have the general public eliminate the word "dumb" from every reference to human beings. The continued wrong use of the word in no wise benefits the deaf.

THOUGHTS FROM THE SCHOOL-PAPER EDITORS

TWENTY-FIVE YEARS AGO

"Mr. Argo came into the school-room to tell all the teachers that he wanted us to spell on our fingers. He said that we should not use signs when we talk."

The above item is taken from the *Kentucky Standard* of April 3, 1888, and is replete with interest for those of us who are laboring with the one who said it 25 years ago. We have heard this same admonition time and again on our superintendent's visits to the school-rooms; more, we hope, as a reminder, than because he saw any signs used in the class-room. At nearly every teachers' meeting the subject has been brought up and means suggested as to how teachers, officers, and employees about the place could give our pupils more English. In our morning chapel only recently Dr. Argo spoke very strongly on the subject, appealing to the deaf pupils themselves to refuse to answer and talk with others who continually used the sign language to them in conversation. Thus we find, after an interval of 25 years, this same idea uppermost in the mind of him who is doing so much for our pupils; the same idea, with but one variation, namely, that speech, if possible, is the best medium of communication, and if this is impossible, then spelled or written English. Looking back 25 years in the *Annals,* we were struck with the small number of pupils then receiving oral instruction as against the large majority today. At that time signs were generally allowed in the class-rooms.

Such long concentrated effort on one idea is bringing forth its fruit. English, spoken if possible; if not, spelled or written; but first, last, and all the time, English.

But why this outburst on our part. It must have struck all of you that the amount of English that our pupils get outside of school is very, very small. A prominent educator recently gave it as his opinion that the deaf child, outside of the class-room and study hour, does not receive more than 30 minutes of English per day. How can the pupil hope to get a working knowledge of a language that he studies only as you and I studied romance languages—a few hours in school, then in all other places back to another tongue?

We are not in sympathy with the ideas recently expressed in a learned article by one of our far western brothers, when he says that the translation of English into the sign language ought to be one of the steps in language-reading lessons. His reason for saying so is that signs are the natural language of the deaf, and in order to make the English clear we must translate it into their language, since, as he says, one studying a foreign language would require his teacher to understand the student's own language and translate the lesson for him into that. This, he says, is the way we studied the ancient and romance languages. Maybe so, but today the most successful and quickest way to learn French is to study it with a master who speaks nothing but French. When a hearing child is learning the English language, into what "natural language" does he require his tutors to translate it for him? If English alone is used with deaf children, why should they, any more than their hearing brothers and sisters, ask for a translation or explanation in any other language but English? We are not qualified to speak on the science of languages, but if we take the views of them who have studied it, we find that Locke, Adam Smith, Dougald Stewart, and Max Muller all speak of language as the invention of man; "they found it necessary to invent artificial signs, of which the meaning was fixed by mutual agreement." A deaf child brought up on the English language knows no other and requires explanation in none other than English. In New York city we happened to know the private teacher of a deaf child. The girl had been under instruction since she was five or six years old, and is now about eighteen and a very good lip-reader. One day in conversation with her in her home, having a little difficulty in making her understand a word as spoken and later written, I inadvertently made the conventional sign for the word, which happened to be "essential," used as an adjective. Having never seen signs, my gesture meant nothing to her, but according to our friend, this was her "natural language." I then set about the task of explaining "essential" to her in her own language—English—and while it required a little more time and thought than to have given a deaf child in school the sign, yet the result was far more pleasing. Given normal deaf children, we bring shame to ourselves and our profession if we admit that we cannot give ideas to our pupils and draw thoughts away from them in this, their "natural" and our "natural" language—English.—*The Colorado Index.*

THE SUMMUM BONUM

According to the last convention issue of the *Mississippi Voice,* the teachers' meeting at Staunton in the good old summer-time of 1914 will have an appropriate slogan—"Best and Biggest Ever."; and suggestions of how to make it such are pouring into headquarters. We can trust to the energy and enthusiasm of Dr. Dobyns to make it the "biggest ever," of course, with Laurens' brand new auto thrown in as a special drawing card, and to Virginian hospitality to take care of the social side. But as to how to make it the best in point of usefulness, we have seen nothing suggested thus far that is better than what Mr. John D. Wright, of New York, has written. We understand that Mr. Wright is a pure oralist, but

he has suggested, in a nutshell, the very things that have long been the great aim of the combined system of instruction. Here they are:

The object of the convention is to help the deaf.

What do the deaf need most?

They need the ability to perform in their various communities some useful service that will give them independence, self-respect, reasonable physical comfort in life, and a peaceful and happy mind.

How can they best attain the ability to perform a useful service?

First. They must have sufficient mental development to enable them to supplement the work of their hands by the work of their heads.

Second. They must have sufficient knowledge of the operations of daily civilized life to perform these operations independently. That means:

(*a*) Arithmetic, as applied to the ordinary transactions of daily life and simple trade.

(*b*) Geography, as applied to ordinary travel and communications by mail.

(*c*) History, so far as it will give them a little grasp of the problems of organized social life and government.

(*d*) Hygiene enough to take proper care of their physical condition.

Third. At least one art or recreation that will serve to relieve the strain of constant labor and effort of body and mind.

Fourth. And *certainly* they must have some one useful and *needed* thing they can do *well.*

Let the convention be so organized and conducted that it will result in *definite, concrete, practical,* and *experimentally demonstrated* suggestions of successful means for attaining these four objects, and it will confer a great and permanent benefit upon the deaf throughout the country, and the volume of "Transactions" will become a valuable teacher's handbook.—*Michigan Mirror.*

Prof. Sidney Jefferson Vail, of the Indiana State School for the Deaf, has tendered his resignation from the teaching force of the school to take effect at the close of the present academic year. Professor Vail will then have completed 53 years of continuous service at the school, having come to Indianapolis in 1860 in response to a call from Superintendent McIntire.

The Teachers' Department

Advertisements of the size indicated will be printed in this department of THE VOLTA REVIEW for teachers and schools using the Volta Bureau Teachers' Agency at the rate of $1.00 per insertion. No obligation to advertise on the part of such persons is implied, for the Volta Bureau Agency will be conducted, as previously, without charge, but this opportunity is offered to those who wish to avail themselves of an additional means of presenting their applications to the profession.

Advertisements may be inserted over the real name of the applicant, or a key signature may be used and replies will be handled by the Volta Bureau.

WANTED—An experienced Oral Teacher. Apply: Albany Home School, 93 N. Pine Ave., Albany, N. Y.

WANTED—Boys' caretaker, experienced. Address: The Volta Bureau, Application E.

WANTED—Supervising Teacher for Primary Oral Department; Northampton training requisite. Apply to: The Volta Bureau, Application O.

Teachers of the Deaf Needed in Chicago.

There is at present an urgent demand for teachers of the deaf in the public schools of Chicago. An examination will be held in Chicago, Monday and Tuesday, June 30 and July 1, 1913. The requirements for this examination are

First—At least a high-school education; and

Second—A normal course in an accredited training school for teachers of the deaf.

The candidates will be examined in

First—Their major subject, theory and practice of teaching the deaf, including a practical test—teaching a class.

Second—The common branches included in the elementary teachers' examination. In the common branches the written examination usually required will be waived in the coming examination and an oral examination substituted.

The salaries for teachers of the deaf in the elementary schools range from $750 for teachers without experience to $1,300.

Application blanks and further information may be had on application to the Department of Examinations, 828 Tribune Building, Chicago.

A. C. RISHEL,
Examiner.

CHICAGO, May 28, 1913

Apparatus for the Study and Correction of Speech

Speech recorders, tambours, forks, recording drums, flame boxes, organs apparatus, strobilion, and all other articles used for phonetics, speech of the deaf, speech defects, etc., made or imported by

The Kny-Scheerer Co.

Department of Natural Science, 404-410 West 27th Street, New York City, New York

Special facilities for duty-free importation for schools.
For further particulars please write

Müller-Walle School of Lip-Reading

FOR THE DEAF ADULT
Eleventh Season

Lip-Reading Taught to Adults

Regular Course (30 lessons)

Conversation Classes and Lectures held for Advanced Pupils.

Normal Training Course for Teachers

Special Summer Normal Course

In response to various demands from teachers of the deaf who wish to introduce this method into their own schools, but who are unable to leave during the winter, a special course will be given again this summer.
For information address,

Miss MARTHA E. BRUHN, 601 Pierce Bldg., Copley Square, Boston, Mass.

Training Class for Teachers

The regular session of Mrs. Monro's Summer Class will be held at 518 Pierce Building, Copley Square, Boston, Mass., from June 23 to July 18, inclusive.
Address,

Mrs. Sarah Jordan Monro,
518 Pierce Building,
Copley Square, Boston, Mass.

Lectures on the Montessori Method

and Observation of Montessori Classes will be given in connection with the Study of Psychology to a

Training Class for Teachers of the Deaf

to be opened in September, 1913, at

THE RENO MARGULIES SCHOOL

(for children with defective hearing)

532-534 West 187 Street, New York

The course will include besides Psychology, History of the Deaf, Physiology and Mechanism of Speech, Pedagogy of Language Teaching, Observation and Practice. The Principal will be assisted by a corps of teachers trained for the teaching of these subjects.

Mrs. A. Reno Margulies has recently returned from Italy, where she spent eight months with Dr. Montessori, partly in study and partly for the purpose of aiding in the organization of the Training Class graduated this Spring in Rome.